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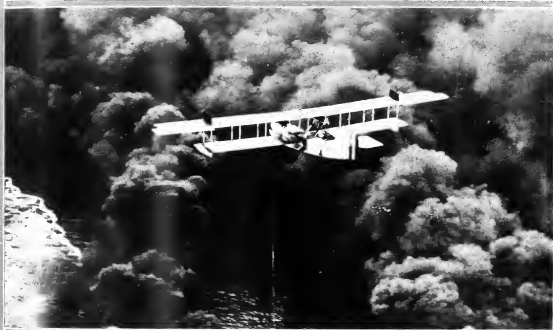
AVIATION

The Oldest American Aeronautical Magazine

FEBRUARY 27, 1928

Issued Weekly

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A Navy F5L flying into a smoke screen laid over San Diego Bay, Calif.

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VOLUME
XXIV

NUMBER
9

Special Features

The Temple Monoplane
Inter-American Air Lines
The Handley-Page Automatic Slot

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EDITORIAL FROM THE NEW YORK TIMES, February 2nd 1911



WRIGHT AERONAUTICAL CORPORATION
Paterson, New Jersey U.S.A.

W R I G H T



The Oldest American Aeronautical Magazine

Vol. XXIV

FEBRUARY 27, 1928

No. 9

The Detroit Show

IF PLANNED and preparation can be taken to assist for anything the All-American Aeronautics Show, which is to be held in Detroit, Mich., April 24 to 27, holds fair to equal if not surpass any other similar affair ever held. There are several reasons which tend to give one such an impression, the principal one being the business like way in which those in charge are going about the task. Preparation is attending to important details has gained the success of more than one aeronautical function held in the past, and it is altogether pleasing to see how the Detroit Board of Commerce, working in cooperation with the Aeronautical Chamber of Commerce, is supplying necessary information to prospective exhibitors to that they may have ample time in which to prepare their respective displays. And incidentally, it is also pleasing to note the way in which the industry is responding to the idea of participating in the show. Another important reason, and one which undoubtedly accounts for the industry's favorable attitude, is the fact that the affair will be held. Ever since Colonel Langley's famous Para flight those engaged in aeronautics, particularly the manufacturers, have been waiting day and night to handle the sudden increase of business and prepare their respective organizations to still further increase in the future. Up until now the great majority have not had the time to even consider participating in an aeronautical exhibit, much less prepare their products for display. But by April, possibly all will be able to take part in the show at Detroit and profit from advertising they will receive.

Authentic Statistics

WITH THE aviation industry growing at its present rate almost all the factories and operating plants are under-manned and the clerical staff has a hard time getting through even the routine office work. It is only natural then that when requests for statistical information are received that they be considered somewhat of a nuisance. AVIATION has in times past sent out several such questionnaires and in most cases the manufacturers and the operating companies have responded to a remarkable extent. The information gathered from these questionnaires has been published and given a definite basis by which to judge the size and needs of aviation and in many instances this information has been of very great value.

Substantive information is of such value that the Aeronautical Branch of the Department of Commerce has been devoting a very considerable part of its time to the making of statistics relating to aeronautical activities. In this effort they should receive the fullest cooperation

of all those concerned. If business interests are to participate actively in furthering aviation they must be supplied with information on which they can rely. No banker or investor is going to put his money into an industry which supports worth without figures. The most important of these figures are those which indicate how many airplanes there are and how many planes of various types are at those airports. Suppliers of materials and accessories want to know how many airplanes are being built, for this information allows them to put their business on a sound basis. With the growth of the industry so private owners can accurately gather all this information and the efforts of the Department of Commerce through the medium of the Census Bureau should receive the support of everyone in the industry.

Costes and Lebrun

THE BRILLIANT successes of American long distance flights this year has somewhat blinded us to the fact that France has flown and planes who have established some most extraordinary flying records. Perhaps the foremost among these have been Captain Costes and Lieutenant Commander Lebrun who for several years have been making most noteworthy flights in their Breguet plane.

The flight which they are now on started with a 2,500 mile non-stop flight to the Senegal in Africa, then next hop took them non-stop across the South Atlantic, a distance of somewhat over 3,000 miles, and from there their tour of South America and their trip to America has been in a series of long flights over very difficult country. Their hops have averaged nearly 300 miles each, which is no mean distance. Their trip so far has carried them some 33,000 miles and though they have not been trying to make a hurried tour they have covered the distance in three months whereas our round the world fliers took seven five months to cover their 28,000 miles. The most interesting sign of progress however is the fact that the American fliers changed engines seven times while to date the French are still using the same Hispano Saisa with which they started. Their ability as navigators is perhaps best shown by the fact that most of the most places which they tried to follow them from Washington to New York got lost in the fog while the two Frenchmen flew the unknown territory without a hitch.

Victors by air from other continents are most welcome to the United States. We congratulate the French on their splendid sweeps and wish them good speed.

The Handley-Page Automatic Slot

By OTTO H. LUNDE
*Head Experimental Section of Aeronautics
 New York University*



THE SLOTTED wing first came into prominence as a factor for securing increased lift from an airfoil, when F. Handley Page, the originator, described it in the *Aeronautical Journal*, June 1921.

The purpose of the Handley-Page slot, or auxiliary airfoil, is to maintain the curvature of flow over the upper surface of the airfoil at angles considerably above the stall point, or angle of maximum lift, in order to produce a lift value substantially greater than that possible with the ordinary airfoil.

The use following the sharp curvature of the upper surface at the leading edge flows at a greater velocity than the gen-

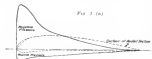


Fig. 2 (a)

erally smooth, and vortex is produced on the upper surface accordingly. Conversely, as increase in pressure is experienced on the lower surface. The resulting difference in pressure set up gives the lifting force of the wing. As the angle of attack is increased, the amount of lift is steadily

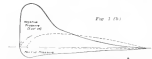


Fig. 2 (b)

increased until the critical angle has been reached where the pressure gradient on the upper surface has increased to such an extent that the air is no longer able to follow the contour of the wing, but leaves it and violent disturbances occur in the flow of air above the wing. The angle at which this con-

dition occurs is known as the *stalling angle*, and beyond this point the value of the lift falls off very rapidly.

The total pressure distribution over an airfoil when placed at a high angle of attack is seen in Fig. 3(a), which shows a strong vortex on the upper side of the wing, and a small pressure on the lower side. The problem connected in getting high lift is that there must be no difference in pressure around the leading edge of the section (no net resistance flow may be maintained) although a very strong vortex must be generated on the upper surface (forward is within the leading edge). The kinetic energy of the air at the point of greatest action must be transformed into pressure when flowing back toward the trailing edge, and this is accomplished by a phenomenon very similar to that of the flow of air through a widening tube.

In order that the wing maintain its lift, however, its flow over the airfoil must be smooth, and smooth flow is possi-



Fig. 3

only with a gradual increase in the widening of the tube of flow. If the diameter increases too rapidly, the flow of air is no longer smooth, but breaks up and flows in a few places. This is precisely the case when banking occurs on an airfoil. The section has increased to such an extent that the pressure gradient to the trailing edge is too steep. Consequently, the flow of air is broken up, and turbulence at loss of lift occurs.

If we consider two airfoils in tandem, the trailing edge of the first acts as the leading edge of the second, we find a greater total lift than that of the two wings separately. Each wing by itself has a disturbance in the flow, namely, above, but in combination the trailing edge of the first is in the region of action created by the following slot.

The first law pressure in the upper rear portion of the leading airfoil, which will consequently follow on its pressure distribution curve. We have seen how the lift of the increase in lift is determined by the steepness of the pressure gradient, and the angle of attack may now be increased until the slope of the pressure curve again reaches its limit. The section now has become greater all over, with consequent increase in lift. The trailing airfoil also experiences a change in its pressure distribution. The trailing edge of the leading air-

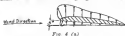


Fig. 4 (a)

foil produces a decrease in the section area the leading edge of the rear airfoil, which follows out its pressure gradient. The section in the angle of attack attainable brings back its original curve, however, which means that the lift on the rear wing remains practically unchanged. The two wings in combination, then, produce a greater maximum lift than separate, with most of the increase supplied by the leading wing.

In the case of the Handley-Page slotted wing, the front flap is cast rounder than that in the diagram above, and all of this auxiliary airfoil lies in the region of greatest action at the leading edge of the main airfoil. Increase in lift is therefore experienced over the entire surface of the main airfoil and not only at its trailing edge. The section

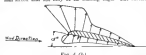


Fig. 4 (b)

at the leading edge of the main airfoil being slightly decreased, we again have a reduction in the concentration of action, and the wing can again go to a higher angle of attack before stalling occurs, with the consequent increase in the total lift obtained from the wing. The resulting pressure distribution is seen in Fig. 3(b).

Having a slot on the rear portion of the wing has the same effect, but to a less pronounced degree. Depressing the rear flap has however the effect of increasing the number and maximum lift and also of giving a larger effective angle of incidence. The larger effective incidence also causes the wing to reach its maximum lift at an earlier angle of attack, which slot is advantageous in so much as the leading angle is decreased rather than increased. The rear flap does have a

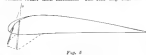


Fig. 5

tendency to counteract the increase in the leading angle involved by the use of the front auxiliary airfoil.

In such a case, a combination of the front slot and its companion, with a slotted rear flap has given the greatest increase in lift. Extensive wind tunnel work has been carried

on both here and abroad relative to the application of these slots and flaps to various wings, with results in fair agreement with each other, and with increase in lift reaching as high as thirty per cent, above the value for the basic airfoil.

The use of the slotted rear flap in conjunction with the front slot was first in a slotted flaps for the two airfoils surfaces, at which that of the Handley-Page "Herdon" shown in the photograph of Fig. 2 is a typical example.

The bulk of full flight experimentation has been carried out by Mr. Page in England, with considerable success, and



Fig. 6

with reductions in landing speeds that well warranted the construction of his investigations.

Having succeeded in making the slot give control and ability to fly in a plane whose wings were at the normal stalling angle, Mr. Page next had his efforts to making the slot automatic in its operation, introducing it as a safety appliance to automatically prevent a ship from stalling, or in being it out of a stalled condition without danger to the ship or its occupants. The successful completion of tests on this automatic device was given out by the London press on October 30, 1927, and marked the period of renewed interest in the Handley-Page slotted wing which aeronautics had never only for experimental research.

The operation of the automatic slot is such that when the plane has reached the stalling attitude, the slot of itself opens



Fig. 7. Showing the automatic slot fitted to the wing of a Handley-Page plane.

and gives to the wing enough increase in lift to maintain steady controlled flight, thus avoiding the possibility of the plane falling off into a spin.

To understand how the action of the slot can be automatic we must recall the movement of the resultant force on an airfoil section, together with the direction of the force. Fig. 8 represents a typical pressure distribution on a wing with various degrees of incidence and direction of forces at various points, at a low angle of attack, corresponding to the high speed condition. It is noticed that there is a large down force on the upper surface of the wing at the leading edge,

Inter-American Air Lines

Some Detailed Information About the Present Situation and the Benefits to be Gained by Immediate Development

By GRISSOM E. HAYNES

OF THE few of it, my proposal to extend our existing system of air lines southward to the Latin American continent seems logical and beyond question. Development which will eventually result, however, very few persons have realized the full benefits of such services, particularly between this country and the more southern countries of the western hemisphere. It is in those countries that our share of the imports are smallest as compared to the ones that must use our boats, and in those countries that our communications are being monopolized by European interests. Our daily military service of these countries is, at most times, controlled or influenced by European means, both of these factors operating against the extension of American air lines and the sale of American aircraft products to the countries of this area. It is freely expressed in well-considered circles that unless some action is taken at the near future, we shall find our economical development south of this country entirely blocked or at least severely handicapped.

Biggest Exports to Countries Nearest

In the following paragraphs are discussed some of the advantages of air mail lines to South America, certain barriers to such developments as now exist and are in process of removal, and the reasons for prompt action as the part of our government and governmental authorities in the development of such lines.

The foreign trade between the United States and Latin America amounted to approximately two billion of dollars in 1932; about \$900,000,000 of this consisted of exports to these countries from the United States. Our share of the exports of these countries ranges from 79 per cent. in the case of Mexico, 85 per cent. in Central America, and down to 28 per cent. in the case of Chile, the rates falling in exactly the same ratio as the distance from our ports increases. This shows conclusively that proximity and rapid communication affect international trade more than any other factor. The fact that Mexico, which sold recently was regarded as somewhat anti-American, buys 79 per cent. of her foreign goods from the United States, and that Peru, regarded as very friendly to us, only takes 28 per cent. of her exports from us is a good point of view, particularly in American investments and American business interests are placed in both cases.

The possibility of increasing our share of the exports of the more distant Latin American countries by means of rapid air mail communication is very strong and deserves thorough study. The extent of dollars and coin results is not easy to predict accurately, but any logical consideration of the problem will show that it is bound to be a large total and in our present industrial advance of possessing surplus production facilities, should prove serious consideration and any possible

Government aid. It is considered that efforts for improving commerce can be a national industrial lifeline in a big way.

Our manufacturers and exporters could place by air, for example, specifications, quotations and terms before buyers and exporters in Argentina, Brazil, and Chile within a few days from the time the samples left their offices and by means of a rapid cable order at small expense, could ship their products to those countries within two days of their appearance in the domestic market. Other industries without end, leading to an increase in our export business to these countries could be stated.

Intelligible, yet highly important, benefits which would result from air mail lines to Latin America would be the rapid dissemination of newspapers, periodicals, news and other informational material which would speed up our knowledge of the United States and its policies, and our purposes in that area. Since most of the hostility of response of these factors among the masses of the population is a better understanding and comprehension is bound to result from rapid communication.

To turn to the visible savings to American business by creation of such air lines, some of these may be summarized as follows: Resultant to the value of the foreign trade in transatlantic travel between the United States and these foreign countries. The average international travel existing conditions is at least 15 days, at a cost of two dollars at one per cent. for that period is a million a year. With air mail lines in existence, the average time in transit will be reduced to 48, at most, five days, saving of one-third of the lost interest, or three and one-third millions of dollars.

U. S. Investments Total About \$15,000,000,000

United States investments in Latin America total approximately five billion of dollars and interest and dividends estimated on per cent. (usually higher) amounted to \$1,000,000,000 annually. The United States annually totals \$100,000,000, 208 million of \$100 million South America. Taking 15 days as the maximum time of loss of these interest and dividend remittances, the interest is treated an interest value of \$750,000,000 a year. This time loss will be reduced to one-third, or \$250,000,000, in an interest saving of \$500,000,000. This raises the interest savings alone to almost 4 million annually, or \$124,224 by the use of air mail. Incidentally, a two-day saving by the use of the half billion transmitted to Latin America annually in the form of loans and investments would save \$632,220, which would raise this total to four and one-third millions of dollars.

In this connection, air mail would be utilized by the

January 27, 1933

same attention in keeping in closer touch with their Latin American customers by following the press of countries in which they are investors and detailed reports could be quickly and easily received from their agents as the same reports, specifications and estimates could be transmitted by the regular and in detail, all of these tending to reduce the loss of interest in this field.

The financial center of the world so far as Latin America is concerned, located from London to New York, together with the World War and post-war conditions. However, the improved communications made available with New York as compared with London, also contributed to this effect and it may not be regarded as an important factor in, at least the present status, particularly when air mail lines between Latin America and Europe are available as will surely be in the future.

As well for the possible benefits of air mail lines in that way. There are many other advantages which will result from air mail lines but too many details could be given in one problem, which is what is to be done to get them realized before it is impossible to do so under favorable conditions, if at all. A logical course of action is as follows: (1) authorize the Postmaster General to make contracts for the carriage of all mail items sent to Latin American countries; (2) let it be pointed that will affect the contractor a reasonable opportunity, for profit.

It is believed the Department of Commerce to survey and establish routes at the earliest possible moment and report suitable routes, landing fields, ports of call, not airports, communications, and practicability of installing necessary aids and equipment.

It is further the Department of State to immediately enter into agreement with the foreign countries involved for the money necessary to establish our mail routes and in exchange and cooperation in the establishment of air mail routes as are recommended by the Department or interest.

Foreign Interest Very Active

It is known for immediate action on the part of Congress, to be taken, and American operations are in the state of the United States. The French which has been successful in our mail lines between the Island of Hawaii, Norfolk of the northern coast of Brazil to Alaska, Argentina, and Montevideo, and the line across the Andes to Chile. Experimental and carrying flights with complete organization and personnel are now being made between Argentina, Brazil and Buenos Aires by the way. These schedules will be completed, sometime this year, the trip of their South American operations by way of air stations between the above island and the Cape Verde Islands with their present service in West Africa from West Africa to South America. This will result in a very rapid night day and service between Paris and Buenos Aires. One of the advantages mentioned in the language of this bill, serving to the commercial interests of Western Hemisphere a much greater degree owing to the larger foreign trade between Western Hemisphere and Latin America than the United States, particularly the more southern countries, and the United States. It is stated by the promoters of this bill that more than 2,000 metric tons of letters and 65 billion letters in a million were transported between the continents to be carried by the France-South America air mail line in 1928.

The Knicker-Schmidt in Brazil (Latin America) is also the Knicker-Schmidt in Brazil and it is so well known in Brazil as such. It is also reaching out to the interior of Brazil as a means of connecting up with the German operations in Bolivia and Colombia is a far

F.O.B. England



A photo of the D.H. "Meth" just received from London, England, by R. Appleton, Grand Bahama Island, Bahamas. Mr. Appleton plans to fit the boat to the plane and use as a mail ship of Grand Bahama Island, carrying at 20,000 ft and using an 8000 ft engine. After that he will mail the other islands for the Bahamas Government.

long network of air lines through the South American continent.

The activities of the German interests controlling the "Deutsch" in Colombia are well known and repeated efforts to extend these operations to the Caribbean and Chile at three times have been made. These, it is estimated, would hamper our development of air transportation to the West Indies, Mexico, Central America, and to the Panama Canal.

The Aero-Engel-Industria in Bolivia is in operation on five lines and already ready to serve as a connecting link in the scheme referred to in the preceding paragraph, being operated by Germans with German equipment and operated by gifts from the German Embassy in Bolivia and also aided by the Bolivian Government. Undoubtedly a military mission of former German officers is attached to the Bolivian Army.

The (temporarily) Germanized activities of the German Junkers in Argentina have been in existence for several years under German control. This company withdrew from Brazil in order not to compete with the Deutsche Luft Hansa's interests and it is believed that today will report itself in Argentina. Meanwhile their commercial and influence are still effective in this country.

Attempts have been and are being made to secure cooperation and operate air lines by German interests in Peru, presumably as another phase of the plan referred to in this work is necessary, both the cost and work costs of South America will have been greatly closed to American air development (completely so—of exclusive conditions are required) and the United States will be forced to sit by, while German and French interests divide the aeromarine development of South America between them.

Spreading generally, it can be said that there is currently a South American country today in which there is not some factor or force which operates against the prohibition of American aeromarine interests and the sale of American aircraft products. These are the forms of military or military actions or the presence of European commercial air operations. Prompt and effective action must be taken by the United States if we are not to be left helplessly behind in the competitive race for international aeromarine leadership in the Western Hemisphere.

The Temple Monoplane

New Mail and Express Plane Manufactured by the Texas Aero Corp.
is Powered with a Wright Whirlwind

By FREDERICK KNACK

A NEW MAIL and express plane which promises to give Texas a place in the aeronautical race, is being produced by The Texas Aero Corp. of Temple, Tex., builders of flying craft since 1908. The plane, a Whirlwind-powered, biplane, has successfully passed its flight tests and is now being placed in the service. As in most American planes, the fuselage is of welded steel tube construction, chrome molybdenum tubing being used throughout. That portion of the fuselage back of the pilot's cockpit is wire braced. It is an open cockpit job with the wing attached to a trans mounted above the fuselage. This affords a very rapid mounting for the wing and makes turning easier. The engine mount is detachable, making it possible to substitute other engines for the Wright Whirlwind.

Stabilizer Adjustable in Flight

Welded steel tube construction is used for the tail surfaces also. The main front beam of the stabilizer is one inch tubing, the rear beam is 1 1/2 in. and to these are welded 3/4 in. steel tube ribs, one on bottom and one directly above, the main beam acting as spacers. When these are braced diagonally by 3/4 in. stock, the result is a very strong, rigid surface. The elevators are built up in a similar manner. The stabilizer is adjustable in flight, the adjustment being made through a stabilizer post operated by a double walking beam arrangement by means of which the leading edge of the stabilizer is raised or lowered. The pilot controls the position of the stabilizer by means of a crank attached to a threaded steel rod which passes through a steel mounted at top of the front walking beam. Turning the crank moves the front walking beam, the action being transmitted to the rear walking beam by means of flexible steel cables. From this point a single link mechanism operates the stabilizer.



Front quarter view of the Temple monoplane manufactured by the Texas Aero Corp.

stabilizer post. The advantage of this type of stabilizer adjustment over the usual notched lever type is that very fine adjustment can be obtained. Instead of their being set five or six, or at most, ten, positions in which the stabilizer can be locked, the number is infinite with the crank arrangement. Like the horizontal surfaces, the stabilizer and its set of welded steel tube construction, with double rib tube welded on either side of the main beam and welded to a stabilizer tube at the leading edge of the fin and trailing edge of the stabilizer. The fin is adjustable for torque by means of a slotted shoe of sheet steel welded to its lower corner.

A Split Landing Gear Used

In accordance with modern practice, a split landing gear is employed. The shock absorbing strut runs from the axle to the upper beam of the front spar. On this is mounted a 12 in. section of rubber compression spring, four inches in diameter and half inch thick, supported by steel plate and held in place by ball bearings welded to the upper and lower parts of the strut. This is simply equivalent to the use of the greatest loads to which the plane can be subjected in landing. The rods pass through the projecting end of the ball bearings and prevent the lower half of the strut from being bent when the wheels leave the ground. The shock absorbers are effectively cushioned, as are the other members of the chassis. A feature of the plane is that all important fittings have bronze bushings, a small refinement, but one which should prove its worth in service.

The wings are of extruded steel two spar wood construction, the beams being of solid brass, with no welding at any joint and are continuous over the entire surface, where they are joined by means of a long tapered splice, which is pin bolted and wrapped. To insure rigidity against torsion, a drag bracing is double, and the compression struts are

all with of the spars. Gasoline tanks are carried in the wing at the center directly over the fuselage. The wing ribs are built up from rectangular strips of spruce 3/4 in. apart, and ground plates of the same material are glued and nailed to either side of the ribs. The leading and trailing edges are reinforced with No. 20 gauge metal strips glued and nailed around the edges. These ribs when subjected to a load test showed exceptional strength. At least factors in

construction is located under the wing, the center of gravity being practically coincident with the center of gravity and center of lift of the airplane. The stability, therefore, is little affected with varying load. The location of the gasoline tanks, at the center of the wing is also advantageous in this respect. The pilot is located back of the wing, where he is comparatively safe in the event of a crash, and where he has good vision in every direction. The gap between wing and fuselage permits him to see directly ahead, and he can see over the top of the wing, having only a very small blind angle. Since it is a monoplane, his vision downward is perfect.

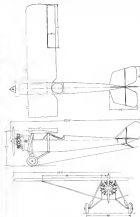
This is a new method design. Much time has been spent in experimentation to obtain the perfection evident in the final model of the Temple. For nearly two years ago, plans of the type have been in use in the Southwest, where they have given every satisfaction. They have been put to every test imaginable, including various steady state full load and have proven that they are correct from an aerodynamic and a structural standpoint. A stress analysis made by AeroTech, Inc., confirms the latter statement and flight test by a Department of Commerce inspector at the end of which he was sworn in as pilot of the plane's flying qualities, gave the truth of the design. In a recent flight from Oklahoma City to Temple, the distance of 220 mi. was covered in two hours and 55 min., which is believed to set a new record for the trip, and this was done with the engine throttled for a large part of the way.

Built First Plane in 1910

The man responsible for the Temple is George W. Williams, president of the Texas Aero Corp., a pilot and designer of long experience. Mr. Williams built his first plane, a monoplane, in 1910. Since then he has devoted his time to engineering, building and flying airplanes of various types, and as a result there is probably no man in the South who has a greater practical knowledge of aircraft than he, a knowledge which is reflected in the design of this plane. The company is at present working out the design for a cabin job, similar to the model, to be produced shortly.

Manufacturer's specifications are as follows:

Airfoil	.....	Standard	.....	U.S.A. 27
Span	.....	.....	.....	38 ft. 0 in.
Chord	.....	.....	.....	6 ft. 0 in.
Overall length	.....	.....	.....	25 ft. 10 in.
Overall height	.....	.....	.....	8 ft. 5 in.
Landing gear travel	.....	.....	.....	8 ft. 0 in.
Wing area (including slats)	.....	.....	.....	225 sq. ft.
Aluminum area	.....	.....	.....	30 sq. ft.
Engine	.....	.....	.....	Wright J-5
Gasoline capacity	.....	.....	.....	50 gal.
Gross weight	.....	.....	.....	2500 lb.
Pay load	.....	.....	.....	567 lb.
Wing loading lb. per sq. ft.	.....	.....	.....	11.0
Power loading lb. per hp.	.....	.....	.....	11.05



Three view drawing of the Temple monoplane.

sum of these required, the stabilizer to the spar gave way, but the rib itself was undamaged. With this cancelled it is evident that the strength of the ribs is far greater than is usual with commercial planes. The struts which brace the ribs here are surface struts. The strut itself is a steel tube. On this are placed wooden ribs having a series of sections, all of which are covered with fabric and doped. In this way the ribs are strengthened from the struts, and when they form a tip dihedral, the lateral stability is improved. A departure from the usual practice is found in the ailerons, which are of all metal welded steel tube construction. A 1 1/2 in. tube from the main beam. The ribs are arranged in the form of a Warren truss, and are securely braced by short sections of welded tube.

The plane was designed primarily for the mail service, and because of its light weight has very good performance. With full load, which includes 80 gal. of gasoline and 500 lb. of mail or express matter, it weighs only 3300 lb. The mail

Grant Lincoln-Page Plane Agency To Parker Bros. of Sandusky, O.

ANNOUNCEMENT has been made that Parker Bros. of Sandusky, O., has been appointed distributor of the Lincoln-Page airplane. Sales work will be carried on at the new airport to be shortly put in shape on a large tract of land lately purchased by the company.

The hangars and equipment planned for the field will put it in shape A, it is said, to serve such as commercial flying and instruction as to be offered.

The Edgar Tobin Aero Co.

San Antonio Firm Conducts Flying School, Air Taxi Service and Plane Agency and Makes All Three Pay

THE EDGAR Tobin Aero Company of San Antonio, Texas, is today on fields united in expanding the many phases of commercial flying in the Texas city and its environs.

Organized several years before the recent long distance flights, gave a new impetus to popular aviation and inspired greatly increased public confidence. The Tobin company has maintained a successfully aggressive campaign toward these same ends and has not with better than average results. In fact the several enterprises conducted under the one company's direction have paid their own way, for some time and are now beginning to make real money.

School Given Field, Hangars and Plane

Edgar Tobin, a world war ace, got into commercial aviation immediately upon his return to San Antonio from France, and shortly thereafter organized the Paul Vance School of Flying. Similarly the hangars were erected and the school opened in one field and hangars, and a fleet of American Eagle planes, with the necessary shops and a staff of skilled mechanics to maintain them.

Out of the school grew a general airplane taxi business which has developed into a frequent flyer and over, operating out of a garage. Later an aerial photographer was added to the staff and now this branch of the business keeps at least one man busy the greater part of the time. A contract was made recently with the state highway department for an aerial survey of the main thoroughfare between San Antonio and Austin, the state capital, with a view to taking a number of the curves out of the highway and shortening the distance.

A few months ago the Edgar Tobin Aero Co. took this agency for the American Eagle plane, put what is claimed to be the first "aerial saloon" in the southwest on the job and provided for anyone, everybody, including the government staff, with the number of miles sold.

"Mooney Plane" Stimulated Sales

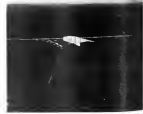
One of the first sales was to the San Antonio Drug Co., a large wholesale house which never dropped it all over South Texas. The plane was christened the "Mooney Plane," and was put into immediate service for emergency help in adjacent towns where drugs were needed quickly and there was no other sufficiently rapid means of transport. The national publicity and good will developed by drug company and stimulated sales enormously for the aero company. A number of other sales were made both for business and private use locally and elsewhere throughout the western part of the state.

Dr. Bernard Smith, San Antonio physician, was one of the first local purchasers, following the San Antonio Drug Co. Dr. Smith's practice covers a considerable area in the vicinity of San Antonio and one of the plane has proven a practical solution of his former problem of trying to get his patients

considerably removed from each other within brief spans of time. Jack Lapham, local business man, was another early purchaser. His plane is used principally for pleasure and sport jaunts. Both of these purchasers, incidentally are now students at the Paul Vance School of Flying. The company also maintains three planes and a number of others, claiming that of the San Antonio Drug Company, at its main shop, thus providing another source of revenue.

The Tobin Aero Company recently worked out an arrangement with the Merchants Transfer Co. of San Antonio which provides a constant source of new "loads" of prospective purchasers, and at the same time provides a revenue from such sightseeing trips. The Merchants Transfer Co. is a large San Antonio corporation providing freight and passenger transportation of various kinds. Included in its service is a number of sightseeing tours through various parts of the city. In collaboration with the Tobin Company a rate was worked out to include the great government system, using fields and planes at Brown and Kelly fields and the airport support at Western Field. A portion of the trip made by motor bus and the remainder by air. The charge for this trip was fixed at \$5 per person, while short bus riders of the tour are provided at \$2 per person or \$10 per tour. Both of these prices have offered excellent business results and increase their opportunity to "take in the air" in safe, government-inspected planes operated by Army-certified pilots, and have helped greatly to spread the popular use of flying.

Edgar Tobin is president of the Aero Company which is



A long "taxi shed" of one of the Edgar Tobin Aero Co. hangars. Note the great expanse of level ground.

February 27, 1932

James, vice-president of the Paul Vance School of Flying and president of the Edgar Tobin Co., Pierre-Arrow distributor for this district. Paul A. Vance is president of the flying school. George Hadden is vice-president of the Edgar Tobin Aero Co. and "Gus" Nelson is secretary and treasurer of the flying school and of the aero company. The Aero Company maintains at "safety" university in the flying and in its frequently issued pamphlets. Officials



At right, Paul Vance, head of the Paul Vance School of Flying. Robert Walter, pilot. Edward Long, member of the staff. Elmer Rose, pilot. Arthur Terry, member of the ground staff and Hal Herring, pilot.

The company claims that this remains the chief item of the business and that the industry as a whole must keep constantly at it until the last vestige of fear of going out is eliminated, as they believe it will be before many months have passed.

Charles L. Lawrence is Awarded Collier Trophy for the Year 1927

CHARLES L. LAWRENCE, who developed the Wright Whirlwind engine, was recently awarded the Collier Trophy for 1927. This award is made each year by the Collier Trophy Committee of the National Aeronautic Association for the greatest achievement in aviation in America, the award of which has been demonstrated by actual use during the racing year.

Lawrence was the pioneer in the development of the airplane engine in America. The first model of the new Lawrence Whirlwind engine was designed by Lawrence in 1912. The present state of production has been brought by its lengthiness for the purpose of aviation in this country with the wing energy of the designer.

The outstanding performance of the Wright Whirlwind engine in 1927 makes many records of national and international interest. The trans-oceanic and other flights made with this engine have resulted in wide spread public confidence in aviation.

The Collier Trophy Committee this year consisted of Dr. James W. Lewis, chairman, Porter Adams, president of the A.S.A., Charles J. Hall, Washington, D. C., Capt. Earl M. Taylor, Washington, D. C., Edward N. Galt, president, Kettering Aircraft Corp., Capt. Edgar S. Lind, assistant chief, Corps of Aeronautics, U.S.N., Carl F. Shuman, secretary,

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Constant Committee, N.A.A., Capt. Burdette S. Wright, U. S. Air Corps, and Maj. Clarence M. Young, director of aeronautics, Department of Commerce.

The trophy was designed in 1920 by the late Robert J. Collier, Esq. The previous awards have been as follows:

- 1921 to Glenn H. Curtiss for development and demonstration of the flying boat.
- 1922 to Orville Wright for development and demonstration of his reliable engine.
- 1923 to Elmer A. Sperry for development and demonstration of gyroscopic control.
- 1924 to W. Bushing Burgess for development and demonstration of Burgess-Dunne airplane.
- 1925 to Elmer A. Sperry for development and demonstration of Sperry Drift Indicator. (The Trophy was not awarded from 1917 to 1920 on account of the war.)
- 1926 to Grover C. Lowery for development and demonstration of his aerial yacht.
- 1927 to the personnel of the U. S. Air Mail Service for their wonderful achievements in completing a year's operation along the different routes from Coast to Coast without a single fatal accident.
- 1928 to pilots and other personnel of the U. S. Air Mail Service for maintaining and improving to such a penetrability of eight flying in commercial transportation.
- 1929 to the U. S. Army Air Service for having accomplished the first aerial flight around the world.
- 1930 to S. Albert Bond for the development of a world airplane propeller.
- 1931 to Maj. E. L. Hoffman for his outstanding part in the development of a practical parachute for use in aviation.

Barren Island is Chosen as Site For New York's Municipal Airport

BARREN ISLAND, lying in Jamaica Bay at the end of Flatbush Ave. in Brooklyn, has been chosen as the site for New York City's Municipal Airport. Unanimous vote for the location was recently cast by the city's Board of Estimate following a motion by Mayor Walker and after William F. MacDonnell, Jr., had argued in an open meeting, the necessity of immediate action. Comptroller Berry was directed by the Board to set aside \$200,000 for the development of the city-owned tract.

Connected With the Mainland

Barren Island, incidentally, is not an island but is connected with the mainland. Here, 100 acres are available for the construction of the city's air terminal, and the tract is already graded and leveled in part so that it is said only a skeleton of expenditure will be required to put the field in shape for use. Airplanes have already landed as the site and terminal may easily be driven in from Flatbush Ave. over what the bulk of New York City may be reached in about half an hour.

Choice of the location came after six months of study and discussion of the project. Barren Island recently received the sanction of the city's committee, composed of Charles F. Kettering, Peter J. Brady, and a member of the Board of estimate, who it made the aerial tour of inspection over the proposed tract. Greenway Island was named as a possible landing station for passengers, freight, and mail.

The Fairchild Combination Pontoon and Ski

Single Unit Permits Landing and Take Off From Water, Snow or Ice

THE METAL Boat Division at the Fairchild Airplane Manufacturing Corp., Farmingdale, L. I., N. Y., has developed a very original type of landing gear incorporating both a ski and pontoon into one unit to enable a plane to land and take off in either water or snow or ice. Two sets of landing gears of this type have been built and fitted to Fairchild cabin monoplanes powered with Pratt & Whitney "Wasp" engines. The planes are now in service at Ontario on the air mail routes of the Transcontinental Airway of Quebec-Canada. They fly out to meet the trans-



The Fairchild pontoon and ski unit. The ski has been lifted out of the pontoon and held in place by a stick to show its construction.

ing mail stations in the Gulf of St. Lawrence, take the mail and bring it across snow-covered land. The terminal is either a snow-covered lake or in deep water necessitating a landing gear of this type.

The railroad that starts the weather ship at the Province of Quebec terminates at a point about 26 mi. seaward from the City of Quebec. Until this year, mail service has been maintained from the end of the railroad eastward by dog team. The Island of Anticosti has been isolated during the winter months and only irregular mail service maintained with the Magdalen Islands, lower in the Gulf of St. Lawrence.

Last fall the Canadian Government requested bids for carrying mail from the end of the railroad to Seven Islands, at the mouth of the St. Marguerite River, a distance of about 300 mi. Bids also were asked for carrying mail from Seven Islands to Elm Bay, Anticosti, a distance of about 380 mi., and from Montreal on the mainland to Magdalen Islands, about 300 mi. east in the Gulf.

The Canadian Transcontinental Airways had awarded the contract, which provided that the planes should be built by the Fairchild Airplane Manufacturing Corp. which company has already delivered six planes to the Canadian Government.

The Canadian Company had to have planes which could take off from and land on either snow or water. On the

mainland there is snow and ice, but at Kila-Isle and the Magdalen Islands there is mostly open water. Because most of the territory between these points is partly frozen over and partly open water.

The special pontoon developed for this service is built like the standard Fairchild model and it is fitted with a ski on the bottom making it essentially an amphibious landing gear. The under surface of the pontoon is of extra heavy steel and it has the ski end as an integral part deep to the center of the keel. The ski is hinged at its forward end to a bracket on the bottom of the fuselage and it is mounted on two shock absorbers. The shock absorber is a constant of two pistons of rubber discs in compression and extended into a water-tight well built inside the fuselage at the step. On each side of the ski is a vertical dash to prevent snow from getting between the pontoon and the ski. This vertical dash is approx. 1/2 in. to the ski when the dash absorber is in compression making a sort of bearing for the ski. From the forward end of the ski to the rear of the pontoon there is a false ski box on the bottom. This box to endorse the ski shape up to the case providing a shoe surface should there be an obstacle in the path of the pontoon. It also helps to protect the rear and front bracket to the ski.

The construction of Fairchild's pontoon has included a detail in January, Jan. 1935. They are of conventional wood and duralumin construction with a rubber ski bottom and rounded tip. The bottom of these "combined" type pontoons vary at seven inch gauge steel. The rubber covering is "skid-plate" the steel covering material, having the product of the American Company of Aircraft, Inc., as



The upper view of the Fairchild pontoon and ski unit, fitted out of the pontoon.

the pontoon is fitted with a large bumper that sometimes is built into the well. The first set of pontoons of this type were fitted to a Fairchild monoplane and tested on the water at Amsterville, Long Island, last December. The water tests were very successful and the plane was flown in Canada where it is now in service with mail and mail water. The Canadian Transcontinental Airways of Quebec City, purchaser of this plane reports that it not only the second model, which has since been altered, is performing very satisfactorily and that loadings at the most have shown that the arrangement is now an anomaly. In spite of the extra resistance of the ski structure after the pontoon, there is little dependence in the performance of the planes on the water. It is stated by the manufacturer that in tests with full load the plane took off in 3 sec without difficulty. Powered with Pratt & Whitney engines the planes have a high speed of 130 m.p.h. at a cruising speed of 100 m.p.h.

Idea Suggested by A. B. Smith

It is said that this pontoon and ski unit was worked out by A. B. Smith, manager of the Metal Boat Division of the Fairchild Airplane Manufacturing Corp. The idea was suggested to the Fairchild Canadian office as an arrangement that would give flying boats to land on snow. The result was a contract for a set of pontoons of this type to be produced in record time in order to be put into use for the winter season. The idea of landing a monoplane on flying boats we know has been known for some time but it is believed that this system of attaching a ski to the bottom is original. It increases the utility of the airplane considerably.

Noted Jumper of Marine Corps Establishes a Parachute School

ALBIE ATHERTON, noted parachute jumper of the U. S. Marine Corps, recently established the Altherton Parachute School at San Diego, Calif. This school is the first of its kind in western America.

Atherton is well qualified for this new endeavor since he is more than 500 jumps from military and civilian airplanes. He holds, among a variety of other facts with the same facts, the distinction of being the first to drop into Yosemite Valley via the parachute.

The equipment used by the school is the Russell Lyle Parachute manufactured by the Russell Parachute Co. of San Diego. "The Russell" holds differs from the standard parachute in the method suspension and method of packing," says the Altherton staff, chief of the Bureau of Aeronautics, who is noted instructor of the last World War. "The Russell has passed eight of these parajumpers, and an extensive test program is planned. In the initial tests, the Russell" while proved to be most reliable and, among other features it is recommended, is in coming."

Distributorship of American Eagle Granted to St. Louis Aircraft Co.

DISTRIBUTORSHIP of the American Eagle airplane has been granted to the St. Louis Aircraft Co. of St. Louis, Mo., according to a recent announcement. The company will set the distribution of this plane in the eastern half of Missouri and in the southern part of Illinois.

1914-1928



The above photo was taken on the occasion of the flight of the AN-4 airplane of the Naval Air Station, Annapolis, on February 27. This plane was delivered at the Washington Navy Yard in one of the earlier types and after the decision had been reached that further testing planes were to be used as standard.

This type of plane was developed in 1914, was equipped with a Curtiss O-52 hp. engine, and equipped with dual control for instruction purposes. The control comprised the full landing. The foot pedal for the throttle, wheel against the rudder, shoulder yoke control to the airframe which were of the early type, while a fore and aft control column operated the elevator.

The purpose of the demonstration which was made by Capt. H. C. Rotherham was to show the officers that had been made in learning planes since the abandonment of the old pusher type.

New Corporation Will Distribute Eagle Rock Airplanes in Colorado

ARKANSAS VALLEY AIRWAYS, Inc., a new corporation, has taken a Colorado distributorship of the American Eagle airplane. The company will make its headquarters at Lakewood, Colo.

At Lakewood it shows by the fact that the stockholders in the corporation comprise men from almost every line of business, including the county treasurer and the sheriff. Delivery has been taken on the company's first plane. Two students have enrolled for flying instruction.

Borton's Airways of Alma, Mich. Now American Eagle Distributor

DISTRIBUTORSHIP of the American Eagle airplane for the State of Michigan was recently granted to Borton's Airways of Alma, Mich., by the American Eagle Aircraft Corp. of Kansas City, Mo. Two planes have already been flown from Kansas City to Alma to be delivered to the new distributor.

The first American Eagle to arrive was met at the airport by a large number of people. The plane, which is piloted by G. L. White of Port Huron, Mich., is owned by W. A. Borton, sales manager of Borton's Airways, at present.

Colonel Lindbergh Returns

Completes 9,060 Mi. Central American Good Will Tour With Non-Stop Flight From Havana, Cuba, to St. Louis, Mo.

AFTER A 35 to 40 min. non-stop flight from Havana, Cuba, Col. Charles G. Lindbergh landed his Ryan monoplane "Spirit of St. Louis" on the tarmac at Lake Mead, Irving Field, St. Louis, Mo. on the late afternoon of Feb. 24. This flight was the last leg of a 9,060 mi. aerial good will tour which was started from Billings Field, White Plains, N. Y., on Feb. 19, 1927, and ended in Mexico City, Central American Southern South America, the West Indies and Cuba.

The trip took Lindbergh to 12 foreign countries, ranged along his long loop-like route. A telephone during the date he arrived at each stopping point and the distance and flying time of the flights follows:

Date	Place	Distance in Miles	Flying Time
Dec. 14	Manzanillo City	4,080	27
28	Guatemala City	675	7
30	Delmas, British Honduras	260	1
Jan. 1	San Salvador	260	2
3	Tegucigalpa, Honduras	150	2
5	Managua, Nicaragua	160	3
7	San Jose, Costa Rica	240	5
9	Panama City, Panama	99	4
12	Progreso Field, Yucatan	19	25
20	Cartagena, Colombia	490	4
27	Bogota, Colombia	430	4
30	Managua, Nicaragua	630	10
31	St. Thomas, Virgin Islands	3,400	50
Feb. 2	San Juan, Porto Rico	90	1
4	Port au Prince, Haiti	150	7
5	Havana, Cuba	600	9
14	St. Louis, Mo.	1,200	15
Total		9,060	116 30

Computations show that Lindbergh flew an average of 445 mi. in each flight, his official time, which ended at Havana. His one-day trip to St. Louis, however, raises the average of the flights to 363 mi. and brings the average air time for the legs to 5 to 30 min. With the exception of his extended stay in Mexico City and his period of rest in the



The "Vanguard" and the "Spirit of St. Louis" at Lake Mead.

Colonel Ryan, Colonel Lindbergh flew a schedule which called for stops of only a few days duration in each of the cities which he visited.

The good will trip began with the most outstanding flight of the group—a 2,800 mi. non-stop trip from Washington, D. C., to Mexico City especially marked by the pilot's ability to find his way through a bad fog from Tampico to Mexico City. After a day of two visits at the Mexican capital he Colonel flew to Guatemala City 670 mi. south, having decided on a tour through the Central American region.

From Guatemala City, where he landed on Dec. 28, Col. Lindbergh turned and flew to a nearby station in Belize, British Honduras. A land plane had earlier landed at this city, but Colonel Lindbergh brought the Spirit of St. Louis on a narrow path field. He arrived at Belize on Jan. 1.

The flight of 1928 was begun two days later when he Colonel flew to San Salvador on New Year's day. From this time until the middle of that month, Colonel Lindbergh flew one day and then found the next would be several at Panama City, Tegucigalpa, Honduras, Managua, Nicaragua, and San Jose, Costa Rica, were the stopping points on the tour of the route. The Colonel arrived himself at a 900 per cent at the Canal Zone.

Having decided to continue his long solo South American



Colonel Lindbergh landing on the narrow path field at Belize, British Honduras.

and the Bolivar, he went first to Cartagena, Colombia, on Jan. 28, from where he turned south to Bogota on the following day and on a southernmost direction to Manizales, Venezuela, to last flight, mountainous territory also covered which never before had been passed by man in the air.

Colonel Lindbergh then flew on the second leg involving a mileage of four figures—a 1,900 mi. flight to St. Thomas, Virgin Islands, which was made in about 13 flying hours. The route there was continued over Puerto Rico, Santo Domingo, San Juan, Cuba, during the early days of February. The latter airman reached Havana, the last goal of the tour, on Feb. 5. His one-stop flight to St. Louis began at 5:30 A. M. from Stanford town on Feb. 12.

Each plane and engine performed well during the two weeks of hard service to which they were subjected. No mechanical troubles were encountered, and only a few instances of adverse weather conditions marred the regular ease of flight.

Approximately 42,000 mi. have now been covered by the man-of-the-air in his Wright Whirlwind powered Ryan monoplane since he first flew it from San Diego, Calif., to St. Louis, en route to New York, on May 18, 1927. In all Colonel Lindbergh has spent more than 900 hr. in the air in his internationally known plane.

Plan Combination Airplane and Steamship Tour for Lake Erie

A COMBINATION airplane and steamship tour of Lake Erie is what the Detroit and Cleveland Navigation Company of steamship lines between Great Lakes ports, will operate with the Stout Air Service, Inc., of Detroit, has been announced by the company.

Passenger holding a combination airplane-steamship ticket will take off from Ford Airport, Dearborn, Detroit terminal of the Detroit-Cleveland airline, and fly to Cleveland, where they will board a Cleveland and Buffalo Transit Co. steamer for Buffalo, after which they will return to Detroit on the regular water route.

Designed all-metal Ford Stout cabin monoplanes are used exclusively on the Detroit-Cleveland airline. The point service is to begin with the opening of the navigation season on Lake Erie, the company's announcement said.

At Detroit and Cleveland Navigation Co. it was stated, a scrupulous adherence to the Bureau of War Fuel regulations, from long, with a view toward placing several of them in service later. These flying boats, of European construction, are a capacity of 25 passengers.

The Texas Co. Buys Ford-Stout All-Metal Plane for Sales Work

RECOGNIZING THE growing importance of the commercial aviation market for petroleum products, The Texas Co. announced the purchase of a Ford-Stout all-metal two-engine monoplane equipped with two Wright Whirlwind engines of 200 hp. each and one Pratt & Whitney Wasp engine of 440 hp. The Wasp will be used in the case of the plane in the West.

In addition to the use of the plane in sales and advertising work, the company plans to employ it for experimental purposes.

Arrangement is also made by The Texas Co. of the employment of Capt. F. M. Hawkins in its aviation division. Captain Hawkins is a commercial flyer whose experience dates from the War.

Three Engine Fokker for Byrd Antarctic Expedition Delivered

COMDR. RICHARD E. Byrd's three engine Fokker monoplane that he is to use on his Antarctic Expedition was recently flown for the first time at Yaleville Airport, Hingham, Boston, N. J. The plane was flown by Benet Eshelby and Floyd Bennett. The plane is essentially the same as the "Anson" and the "Joaquim" Fokker. It is a Fokker F VII with a slightly larger wing with special tanks and equipment for a long distance flight. The span is 71 ft. 2 in. which is approximately eight feet more than that of the standard F VII. This increases the wing area from 630 to 797 sq. ft.



Test flight picture of Commander Byrd's trimotor Fokker which he will use on his South Pole flight.

It is 45 ft. 10 in. long and 12 ft. 10 in. high. It has three 200 hp. engines in the wings and two 440 hp. engines in the tail. The total capacity of the plane is 600 gal. With a total fuel consumption for the three Wright 30 engines at about 28 gal. per hr. the plane should have a range of about 24 hr. or 2,340 mi. with a full load of approximately 12,000 lb. (This is assuming a cruising speed of 90 mph.) The plane weighs about 5,000 lb. empty and will therefore carry more than its own weight.

Three 30 Gal. Oil Tanks

There are three 30 gal. tanks for oil, one behind each engine. In exhaust leader system is provided leading to both the cockpit and the navigating compartment which are separated by the main fuel tanks. There is a space between these tanks so that one can easily get from one compartment to the other. In the navigating compartment there are openings in both the roof and the floor for making observations. Though the plane is at present fitted with wheels the fuselage center section has been reinforced so that either skis or pontoons may be substituted.

After its first flight, which was to Mitchell Field, Long Island, N. Y., the plane was flown to Miller Field, Staten Island, N. Y., to be prepared for a trip to the middle west.

It is understood that the Byrd expedition will leave New York for the Antarctic on Sept. 18 aboard the ice ship *Simpson*. The ship is now in Tromsø, Norway, where it is being fitted. It is expected that the expedition will return in June 1929 or June 1930 depending upon conditions.

All-American Aircraft Show

Both Historical and Modern Equipment to be Exhibited in Convention Hall, Detroit, Mich., April 14 to 21

PLANES AND personnel for the All-American Aircraft Show, scheduled to be held in Convention Hall, Detroit, Mich., from April 14 to 21, are now well under way according to latest reports. The show which gives recognition of being one of the greatest aeronautical exhibits in the history of the industry will be conducted by the Detroit Board of Commerce in cooperation with the American Chamber of Commerce of America. Ray Canger will act as manager of the show, and Frank W. Ryan is chairman of the Detroit Board of Commerce, and William B. Mayo of the Ford Motor Co. is chairman of the Show Committee, to which members, William E. McNamee, Thomas S. Merrill, Harry E. Glavin, Carl L. E. Work and Lord H. Kilfer, Louis Jack Harbo, one of the second the world there and now connected with the American Chamber of Commerce of America, is responsible for the show.



William B. Mayo, chairman of the Show Committee.

Among the organizations that have approved the show are the Department of Commerce, the American Chamber of Commerce of America, the National Aeronautics Association and the Detroit Board of Commerce. The historical exhibit will include practically every step in the development of American aircraft. Among them will be gliders, a monocoque model on the first Wright self-powered airplane and many other exhibits of aeronautical progress in years gone by. There will also be exhibited the famous "J" airplane, Ford's "V" airplane in which Commander Ryan and Pilot Floyd Beardsley sailed the North Pole May 30, 1926, and the "Queen of the Skies" monoplane, "Princess of Detroit," in which Felix and Brook flew from Boston Green, New Hampshire, to Tulsa last September, 1937.

The Aero will have an interesting exhibit, including a number of military planes of new obsolete types, several of which, however, were second line models of their day. The most recently developed fighter planes, believed to be second to none of their kind in the world, also will be shown. Specifications are under way for the presentation of several other interesting record breaking planes, principally among which is the "Spirit of St. Louis" recovered the world over

as the most famous airplane ever built. An effort will be made to have Colonel Lindbergh, his plane, and his baggage in Detroit during the show.

By special permission of Major John C. Lodge, of the town, grand scale of Colonel Lindbergh, the work of the day has been set aside as "Aviation Week." Between 10 and 15,000, men of the air and their activities, will provide the city.

The aeronautical branch of the Society of Automobile Engineers is planning to hold a special meeting in Detroit during the show. Practically every civic and industrial organization of the city also plans to hold meetings for the purpose of discussing aeronautics. The presence of airplanes, whose names are inscribed words wherever the aviation industry is known, in aeronautics will be made in every well known person in the industry.

Under direction of the All-American Aircraft Show Committee, headed by William B. Mayo, the Board of Commerce has added not more than 5,000 revolution in aircraft manufacturing, aircraft engine manufacturing and maintenance of aircraft.

Within ten days after the initial revolution has been laid in the south more than 70,000 sq. ft. of floor space has been reserved by the aircraft division of the industry alone.

A total of 2,000 sq. ft. has been taken by the American Chamber of Commerce. Within the same period the show committee had reserved dozens of letters from both airplane and automobile manufacturers are asking for further particulars and providing reservation of an additional 30,000 sq. ft. The exhibition building has a ground floor space totaling 100,000 sq. ft. more than any other building of its kind in the world.



William E. McNamee, chairman of the Detroit Board of Commerce.

In sending messages to aviation leaders and kindred relations over the United States covering their cooperation, Fred J. Raynes, Chairman of the Board, Detroit, Mich., and president of the Detroit Board of Commerce, is proud the fact that the show is not being presented in a city.

"While the All-American Aircraft Show is being presented

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the Detroit Board of Commerce, it is not being presented in a hotel," Mr. Raynes said. "As a result, it has the same story-telling of the Department of Commerce, the American Chamber of Commerce of America, and the National Aeronautics Association. It is to be much more than an exhibit of the latest models of flying craft and will, in fact, be a pageant of aviation, designed to afford opportunity for close study of what aviation may mean to the progress of the country."



Map showing the location of the show in Detroit, Michigan, near the Detroit River and the city center.

tion. The progress of aviation will be graphically depicted by the actual exhibition of aircraft from the early days of Wright and Langley, down to the present time. Men of actual and world-wide prominence whose names have been confined to the annals of air, will be present.

Recent new and interesting developments of craft, engines and accessories will be on view for the first time of the show. Notable among these exhibits will be the new Leaning Tower, a commercial aircraft job, the first of its kind to be shown in the field of commercial aviation. The company in which the efforts in the past chiefly in building engines for the Army and Navy. The Leaning Tower Engineering Corp., incidentally, was the first company to apply for space reservation with the show committee.

Other companies of the aircraft division that have applied for space reservation at this writing are:

Boeing Aircraft Corp., Detroit, Mich.; Alexander Aircraft Co., Detroit, Mich.; Pitcairn Aircraft Co., Detroit, Mich.; Bellanca Aircraft Corp., Wilmington, Del.; Ford Motor Co., Detroit, Mich.; Cessna Aircraft Manufacturing Co., Detroit, Mich.; Travel Air Manufacturing Co., Wichita, Kan.; Waco Aircraft Co., Chicago, Ill.; Advance Aircraft Co., Tex. O.; International Aircraft Corp., Cincinnati, O.; E. W. Cessna Aircraft Co., Houston, Tex.; and the Fairchild Aircraft Manufacturing Co., New York, N. Y.

First to reserve space in the aeronautics division was the Ford and Waco Aircraft Co. of Hartford, Conn., owners of the highest powered radial air-cooled engine. Others apply within the first ten days were: Stinson Magneto Co., St. Louis, N. Y.; Barry Brothers, Detroit, Mich.; May-Way Company, Kansas, Mo.; Packard Motor Car Co., Detroit, Mich.; Johnson Aircraft Supply Co., Dayton, O.; Vroom & Sons, Reading, Pa.; Standard, Conn.; International Aircraft Co., Brookline, N. Y.; Pioneer Aviation, Inc., Philadelphia, Pa.; All Spark Plug Co., Flint, Mich.; Mich-

igan Mutual Liability Co., Detroit, Mich.; S. F. Goodrich Co., Akron, O.; Kendall Radiating Co., Bedford, Pa.; and Hartford Radiating Co., Hartford, Conn.

Already as plans of the industry will be exhibited. Craft, engines, parts, instruments, auxiliary plane materials, firm's equipment, air schools, promotion organizations and last, but by no means least, airports, will play a part in the show.

Particular preparations are being made for the airport section of the exposition. This section will embrace models of fields, now designed by airport engineers, and conferences between leading airport managers, designers and representatives of associations contemplating the establishment of airports. The show committee has written to airport planners, engineers and managers all over the country requesting them to participate in the show and enter their airport models.

New Engines to be Exhibited

The airplane power plant section of the show should prove particularly interesting. In it will be seen for the first time several engines to go on the market during the coming year. In addition, there will be a number of other recently developed engines on display. The seven-cylinder, radial, air-cooled Warner, now being produced by the Warner Aircraft Corp., is one of the former class that has been proposed for display at the show. The most recently developed Pratt and Whitney, Wright, Pittsme and Packard are among others to be shown. The Pratt and Whitney, which has latest "Beehive" plane, with the two cylinders, 30 hp., on each side. Ford engine that carried Harry G. Hines on his recent ten-day flight from Detroit to North Carolina.

In these days of rapid and, at times, revolutionary changes in aviation, the All-American Aircraft Show Committee has taken the opportunity to exhibit the most advanced Detroit engine for airplanes and propellers have been started to display at least one of the type of the exposition. It is not at all unlikely that the Ford Motor Co., which is known for its outstanding work in the field of large planes, will be ready to show its present work in the show again.

A feature of the greater division will be the display of one of two new series built by 300 students of aviation in the automotive department of a Detroit high school. Model airplanes built by students are now competing in a model contest in Detroit will also be shown. Added to that the University of Detroit and Case Technical High School at Detroit will place on exhibit planes built by their respective students.

International Aircraft Plane On A Good Will Trip Through South

AN AERIAL "good will trip" was launched the middle of this month with the departure from Cincinnati, O., of a two-engine plane of the International Aircraft Corp., whose plane was recently named "Goodwill" from California, for points in the South and Southwest.

The plane, which is the new one that was piloted from Long Beach, Calif., to Cincinnati in 23 flying hours, bringing an entire family and 1,500 lb. of baggage, was entered by H. A. Ryan, vice president and sales manager of International; H. E. Humphrey, vice president of International; and Capt. J. L. Ryan, former air mail pilot on the Transcontinental Route.

First stop at Louisville, Ky., the southern way carrying the plane along the Mississippi River to New Orleans, there was into the state of Texas, Oklahoma, Kansas, Louisiana, Colorado, New Mexico, and California, where it will be on the way back. The trip was scheduled to continue three weeks.

Paris to New York

French Airmen, Costes and Lebrun, Make 23,000 Mile Flight Over Four Continents and the South Atlantic

BEARING ON the value of the feat on commercial record proving their own great ability and the worthiness of their present planes, Capt. Henri Costes and Lieut. Louis Lebrun, headed at Midland Field, N. Y., on the morning of Feb. 11, after having completed a trip of some 23,000 mi. over four continents. Costes and Lebrun started from Paris, France, on Oct. 16, on the four months trip which brought them to New York.

This trip of 23,000 mi. is not the first long distance flight made by the large green Breguet biplane. On previous flights, the Breguet was flown to Ouak, Gabon, Angola and Dakar, Senegal, and to the Sudan in a number of stop-over trips that set new distance records prior to the trans-Atlantic flight of American flyers last summer. These flights included a distance of over 44,000 mi., making a grand total of over 87,000 mi.

The biplane has needed but little attention, having been built sturdily and well suited for it is a No. 10 Breguet, Grand Rail type, powered with a No. 24 Ver type, 12 cylinder, water-cooled Hispano-Suiza engine of 850 hp. The plane, painted striking green but for two stripes and an emblem on the sides of the nacelles, presents an impressive sight. Its name, "Neposure-Coll", does not now stand alone, for the name now bears the names of the various cities at which the plane has stopped.

Costes and Lebrun left Le Bourget Airport, Paris, on Oct. 16, and arrived at San Leon, Senegal, Africa, upon Oct. 21.



Captain Costes, (right), and Lieutenant Commander Lebrun being greeted upon their arrival at Midland Field, L. I. Lieutenant Chamberlain is standing between the two aviators.

Three days later they left the latter city to make the first eastward flight across the South Atlantic—a trip of 2,000 mi. which ended at Port Natal, Brazil. From Port Natal, the flyers continued to Bahia, Garretville and Rio de Janeiro, Brazil, and then, crossing on a tour of the South American republics, they flew to Buenos Aires, Argentina; Pampas, Paraguay; Santiago, Chile; La Paz, Bolivia; Lima, Peru;

Guayaquil, Ecuador, and to many other South American cities. From Ecuador, they came back down to Panama City, where they turned south again and flew to Caracas, Venezuela, and to Barranquilla, Colombia.

Returning once more to the Canal Zone, Costes and Lebrun participated in a meeting at Colon which brought together Col. Charles A. Lindbergh, Lieut. James Doolittle, C. R.



The green Breguet plane "Neposure-Coll" being tested on the hangars at Bolling Field, Washington, D. C.

Whitely, Lieut. Hugh Wells, winner of the world race, and Lieut. Maurice Prentiss, owner of Eddie Stinson, Detroit airplane manufacturers. The gathering continued on Jan. 25.

From Colon, Costes and Lebrun continued on their tour to Guatemala, Mexico City, New Orleans, Montgomery, Ala., Washington, D. C., and finally, on Feb. 11, to New York City. A stop across the continent is now planned, following which the French aviators will place their case on board a ship and return to France by the water route.

With the exception of a few delays, the entire trip from Paris was without a serious break in schedule. At Port Natal, Brazil, a stamp on a new field slightly injured the propeller of the Breguet, but this matter was soon remedied. At a few other points bad weather forced Costes and Lebrun to put off planned arrivals.

It is especially interesting to compare the record with that of Colonel Lindbergh's Central American trip. With an average speed of 107.5 m.p.h., for the 222 air hours from Paris to New York, Costes and Lebrun bettered Lindbergh's average by nearly 20 m.p.h. Furthermore, in the 16 days from Paris, the Frenchmen covered in six flights some 20,000 miles. Lindbergh's average for the 16 was 617 mi. per day; the plane, the Breguet had traveled much faster before the present tour from Paris than the Spirit of St. Louis had flown in its entire career.

Doolittle's record holds his superiority in the French air force. He was the first to fly across with 11 engines the Military Medal, and the Legion of Honor, for his work

in the World War. Costes flew on the Paris-London air line after the creation and has also served on the Morocco route. In 1925 he was made chief pilot for Breguet.

Lieut. Commander Joseph Lebrun serves in the French Regular Army and is rated as both pilot and aviator. He also served on the Morocco route and is an officer of the Legion of Honor.

International Aircraft Co. Starts Production in New Cincinnati Plant

AFTER MOVING almost the whole organization from Los Angeles to Cincinnati by air, the International Aircraft Co. has located, prepared its field, and started production. The International is located at Avon, O., which is about 10 mi. east of Cincinnati. The field prepared for the use of the company has a runway 18 ft. high, about 400 ft. wide at one end and 200 ft. wide at the other. No commercial work will be done at the field although a change of welcome a changing car at all times for visiting pilots and service will be available.

Plans for production of the two types of planes will for 400 of the open three-place OX2 type for 1932 and 200 of the other airplanes. No structural changes will be made in its craft, it is said. Both planes are of wood construction with conventional wings, fuselages, wings, engines, spars, and ribs, while the covering is of fabric. A Wright Whirlwind powers the high plane and an OX2 the smaller.

According to Speer, pilot and sales manager of the company, plans are on hand to make the production of 300 light planes and 100 cabin planes entirely possible during 1932.

E. A. Speer and Raymond D. Hanna of the Cincinnati Aircraft Sales Corp. recently took the company's three-place open International plane and the five passenger cabin plane to Washington, D. C. for official test flights by the Department of Commerce. The type certificate was granted on the open model plane, and it is understood that the F 15 will also be granted a certificate. On the return from Washington, Speer made a stop-over flight to Cincinnati, O., in five hours.

E. A. Speer had previously flown the F 15 from Los Angeles to Cincinnati, carrying E. M. Park, manager of the plant, and C. R. Dyer, vice president of the firm. Arld Park, who flew the coach International, made the journey in less than 4 1/2 hours' time and saw. The entire trip was made in 32 hr. flying time.

Weather Reporting Increased On Two Western Airway Routes

THE WEATHER reporting and communication system on the Salt Lake-Panama and the Chicago-Panama airways has been succeeded as a result of a recent survey, according to the Department of Commerce. New locations for weather reporting stations have been selected on the Transcontinental route, and in the western part of Salt Lake road stations will be selected as soon as the lighting is completed.

The weather reporting system on the Dallas-Chicago route has been selected to one for the night flying now in operation on this airway.

All stations are being furnished with a standard set of observational instruments, and a pamphlet is in preparation in cooperation with the Weather Bureau in which will be included instructions for the care and maintenance of these instruments, together with instructions as regard to making and reporting observations.

St. Paul Aviator Loops 1,093 Times In Laird Plane to Set New Record

"CHARLES 'SPARKY' HALLMAN, St. Paul pilot who was last year's New York-based one day flyer, broke the world record for looping when he turned his Laird Commercial biplane powered with a Wright 24 200 hp. engine 1,093 times above the Wald-Chamberlain Field, Minneapolis, Minn., on Feb. 12. Over another part of the field, Lyle A. Tins, pilot of the Minneapolis Aircraft Co., broke the world record for light airplanes in the same event when he made 543 loops in his 50 hp. OX-2 powered by Engstrom.

Field the Standard before, the record for looping had stood at 325 turns, but Owen Skunk, Morgan, Minn., law student, began attempts at the record which grew to the world mark when he received 515 turns over the St. Paul Airport. However, Tins showed his record to stand but a week, however, Holman making a hurried loop from Chicago in order to make his try a week later on his home field.

Holman carried 35 gal. of gasoline in his flight of 1,093 loops. His turns were made consecutively over a period of about four hours. There's tanks carried 46 gal. of gasoline. The field tested slightly more than four hours.

The methods of looping came from Holman's hand on. Three because consecutive maneuvers could be made without loss of altitude in the flight of the lighter planes. This would, of course, make a series of loops, and then climb again.

Holman's plane did not descend about five inches of gasoline when he landed after his record-making flight. Tins had consumed but 30 of 45 gal. with which he had begun his flight.

Official spectators stood on the roof of the air mail hangar to count off the loops for the pilots and signal them as the fuel of each 100 turns. At intervals of 15 min. or so, the officials called the numbers to the crowd which was on hand to watch the event.

Rankin Flying Service Makes 18 Waco Plane Sales During January

WACO PLANE sales of the Rankin Flying Service, Portland, Ore., totaled 18 for the month of January, according to a recent summary. This compares with the company sold during all 1930 and 1931. The Rankin leads the service.

Announcement has also been made that the company has received the appointment as distributor of the Ryan Wingless monoplane for Oregon, Washington, and Idaho. Rankin recently went to California to check one of Ryan's planes in order to use it as a display at the center, marine, and aviation show scheduled for next month in Portland. The plane will be placed in constant service over Mount Hood this spring.

Martin Jensen Now With Golden State Aircraft Co. in California

MARTIN JENSEN, pilot of the Albatross, one of the two planes to finish in the Dale race in Hawaii, is now associated with the Golden State Aircraft Co., Oakland, Calif. Jensen has already made several business trips with James L. Mahberry, president of the company, to the northern part of the state. The Golden State Aircraft Co. distributes the Alexander Engstrom airplanes.

United States Will Have 25 Air Routes Under Operation by July

THAT THERE will be 25 air routes in operation by July 1 is the opinion of the House Committee on Appropriations in a report recently made public. The present number of routes is 27 with seven mail lines under contract but as yet not in operation, according to a bulletin of the Director of Aeronautics, Department of Commerce.

The total savings realized by the service at this time will be \$1,500,000, and the average distance covered each day by airplanes carrying mail, passengers, and express will be 20,750.

The House committee recommended appropriations totaling \$6,500,000 for the next fiscal year. Practically the entire sum paid for this service will be returned in the form of air mail postage. That such an amount should be made available for the payment of air mail contracts is but an indication of the growth of air mail transportation. Other features of the industry are not covered by the report of the committee, for the reason that they are not strictly operating, a part of the inland service. These features are the carrying of passengers and express by the companies that hold mail contracts. Of the existing routes, 35 are equipped for passenger service while some also carry express.

Company Under Formation to Build Taylor Aero-Wing Chummy Plane

FOLLOWING THE successful flight of the Taylor Aero-Wing Chummy two place light type monoplane on its first test at Rochester, N. Y., the formation of a company to use under way, to build the Taylor Rochester Airplane Mfg. Co., which will produce one place and two.

The owner of the new monoplane, which has a 35 ft. wing spread and equipped with a 90 hp., 19 cylinder, air-cooled



Gilbert Taylor left, and Gordon Taylor standing in front of the "Aero-Wing Chummy"

Aviation engine, marks Rochester's entrance into the aeronautical industry.

The Aero-Wing Chummy on its first take-off lifted itself after a run of less than 300 ft. and in less than 10 sec. Its banks, turns, rises, and falls of the climb showed remarkable response to the touch of controls. It climbed at a rate of more than 600 ft. per minute.

The flight was made before a large number of business men, and members of the Rochester Flying Club and the National

Aeronautics Association who were impressed with the performance.

The craft, made to sell for less than \$2,400, has three outstanding features, the Taylor brothers, designers as builders, explained. The pilot and passenger sit side by side in the spacious cabin enclosed with pyralis instead of canvas. On the other, the aircraft are controlled by torque rods connected with the control stick, and the front edges of the wings are covered with metal instead of cloth, reducing its maintenance.

The new company also plans to build four place planes of similar design, equipped with a 90 hp. engine. Further tests of the new two place plane will be made during the next few days, after which an application will be made for a Department of Commerce approved type certificate.

The design of the new machine is the side-by-side dual control, which, the Taylor brothers say, will meet with the approval of the flying schools. This arrangement makes it easier for the instructor to watch and guide his student.

Goodyear Interests Plan Factory For Dirigible Construction in U. S.

THE GREATEST development of lighter-than-air craft will soon be under way in the United States, according to a recent statement of Mr. P. W. Leitchfield, president of the Goodyear Tire and Rubber Co., and Vice Pres. Karl Aronson of the Goodyear-Zeppelin Co.

It has long been known that the Goodyear interests were working with the Zeppelin designers of Germany to perfect a lighter-than-air craft superior in every way to any now built. With the award of a Navy contract to the Goodyear-Zeppelin Co. for the construction of two great military dirigibles of new design, it became apparent that this money was soon to catapult all others in the development of this type of aircraft.

Speaking recently before the members of the Los Angeles Chamber of Commerce, both Mr. Leitchfield and Mr. Aronson stated that the Goodyear-Zeppelin Co. is going to build a great \$10,000,000 hangar and factory at once in order to fulfill the terms of the Navy contract and also with the view of carrying on the construction of this type of craft for sale into the field of commercial air transport. Mr. Leitchfield stated that his company desired to locate this plant in Los Angeles, as this territory was thought to be ideal for such a project. Immediate construction of this great factory and hangar, however, could not be started unless the city of Los Angeles is willing to provide a suitable landing field with adjoining runway side view. Provision of such a field would make Los Angeles the world's Zeppelin center, and it is thought that Los Angeles business men will hasten to meet the construction of this project.

United Airways of Monroe, N. C. Granted Allison Airplane Agency

DEVELOPMENT of the sport planes and high lift wings manufactured by the Allison Airplane Co., Layton, Kan., has been granted to the United Airways of Monroe, N. C., according to a recent announcement of the company. The United Airways will be agent for North Carolina.

The North Carolina company has already equipped its J3840 with a set of high lift airplane wings using the 7.847 wing curve. The plane is being used for demonstration purposes.



THE ORIGINAL SRB BALL BEARINGS ARE STILL IN COLONEL LINDBERGH'S WRIGHT WHIRLWIND ENGINE

SRB Ball Bearings were in the thrust position as well as in the rear end for oil and fuel pumps and the synchronizer drive shaft of the Wright Whirlwind Engine which carried Charles Lindbergh, then a locally known air-mail pilot, from San Diego to New York and thence on to Paris, and made him the best known flyer in the world.

Then, with only a brief respite, and after careful inspection that indicated no need for replacement, these SRB Ball Bearings with balls forged from Mallinckrodt Steel carried the Spirit of St. Louis.

This organization is justly proud of the truth of its slogan

STANDARD STEEL AND BEARINGS INCORPORATED

STANDARD STEEL AND BEARINGS INCORPORATED

Ball  Bearings

John Nelson Named Vice President Of The B. F. Mahoney Aircraft Co.

JOHN NELSON, former manager of the East St. Louis plant of the National Mailable and Steel Casing Co., has been named vice president and general manager of the B. F. Mahoney Aircraft Co. which is shortly to begin work at a factory at Lambert-St. Louis Field.

Nelson was in San Diego, Calif., recently to confer with B. F. Mahoney about the plans of the company, which is transferring all its activities to St. Louis. The company is the maker of Ryan monoplanes. A production of more to 25 airplanes a month is tentatively planned.

A factory site for the Mahoney plant has already been laid out on the Washburn Road to the north of the flying field, with ample parking facilities available. It is possible that the site may be re-located on the new field, plans being prepared by Engineers Ellis & Hill in any event the Mahoney plant as well as the other airplane concerns will have a place within easy reach of landing tracks.

Proposed Sites for 1928 National Air Races Surveyed by Committee

A PRELIMINARY SURVEY of Southern California is now being conducted by the site committee of the California Air Race Association in an effort to choose the logical location for the 1928 National Air Races to be held some time in September.

Sites now being seriously considered are located at Santa Monica, Long Beach, Santa Ana, San Francisco, and several places along the metropolitan area of Los Angeles.

It is hoped that the city of Los Angeles will purchase and equip a great municipal airport in time to accommodate these races, but in the absence of definite action the committee is proceeding with the idea of a field in order that arrangements for staging the races may be made promptly.

Present plans call for a great international exposition of planes and aircraft products in connection with the show.

Raymond D. Harris is Now With Cincinnati Aircraft Sales Corp.

RAYMOND D. HARRIS, formerly head of the Embury-Biddle Flying School at Leuker, Ariz., has joined the Cincinnati Aircraft Sales Corp. which has the agency for international planes out of Cincinnati. Harris is a graduate of California Poly in 1922, and he has taken the University of Washington, commercial engineering course. He is now a general flying in the Northwest and they came to Cincinnati, where he built up a reputation for ground school instruction in the Cincinnati Flying School. In the new corporation, Harris is associated with Albert Wessels. The latter is also a former employee of the Embury-Biddle firm.

Toledo Aerial Transportation, Inc., Formed for Training and Service

INCORPORATION PAPERS have been issued to the Toledo Aerial Transportation, Inc., of Toledo. The company is capitalized at \$2,500 and was incorporated by Harry W. Gilbert, Malcolm T. Sargent, and John Goodrich. The company plans to train students and engage in commercial flying.



A picture of the large airplane carrier, U.S.S. SARATOGA, as it sped through the Panama Canal to the Pacific in its present first maneuvers. The new plane carrier the first ship ever to pass through the canal, at times swept the sides of the locks very lightly, but no serious damage occurred.

Hincheliffe Buys a Stinson Plane For Flight from London to India

W. O. R. HINCHELIFFE, British pilot, who was to fly Charles A. Levine's Bellanca monoplane, Colombia, on Levine's proposed London to New York flight, has purchased a Stinson monoplane for a contemplated hop from London to Rangoon, India. The plane was recently shipped from the Stinson factory. The monoplane has a capacity of 250 cu ft of gasoline and 25 gal. of oil.

The flight between London and Rangoon, a distance of 4,000 mi., will be, it is said, the longest one day hop ever attempted. Hincheliffe is devoted to use a Stinson plane was made, he says officials said, after he had inspected the Pride at Detroit, the Stinson monoplane flown by Solovie and Brock in their Barber-Greene to Tokyo flight.

N.A.T. to Begin Detroit-Toledo Night Airline Service March 15

A NIGHTLY operated airline between Detroit and Toledo will be inaugurated by the National Air Transport Co. beginning March 15, Howard E. Coffin, chairman of the board of directors of that organization, announced here today. The N. A. T. Coffin said will run a passenger, mail and express line to Toledo, where the line will connect with the main line to eight principal industrial cities of the United States. The Ford Airport will be used until a new airport is provided.

"This service," the chairman stated, "will give Detroit its service to New York 24 hr. service to the West coast, and eventually 24 hr. service to Central America."



DISTRIBUTORS

American Sales Company of Oklahoma
1-100 Woodward—Oklahoma City

American Aircraft Corporation, Hartford
1000 Main—Hartford, Conn.
1000 Main—Hartford, Conn.

Donald M. Davis, 1015 Campbell
1015 Campbell—Chicago, Ill.

Eastern Flying Service,
1015 Campbell—Chicago, Ill.

Ernest Flying Service, 1015 Campbell
1015 Campbell—Chicago, Ill.

The Airplane and Aircraft Sales Co.,
1015 Campbell—Chicago, Ill.

Laboratory Exhibition Company, 1015
1015 Campbell—Chicago, Ill.

Winters, Adams, 1015 Campbell
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Announcing Production WACO 10 Ryan-Siemens Motored

Department of Commerce Type Certificate No. 25 for Airworthiness

AFTER exhaustive tests of the Ryan-Siemens, one cylinder, 125 horsepower motor installed in the WACO TEN it has been accepted for production. A large supply of motors have been ordered and you can now have this excellent combination with assurance of prompt delivery.

These motors thoroughly proven over a period of years and used as standard equipment on numerous commercial airways of Europe gave the WACO TEN a range of performance unequalled at its price.

The position that WACO AIRPLANES have attained in the commercial field coupled with this proven engine are assurance of Consistent Performance under all conditions.

Have the WACO Distributor nearest you explain this Waco-Ryan combination—fly in it—convince yourself that it is all that we claim and more.



GENERAL AIRCRAFT COMPANY
TROY, OHIO

THE NEW ANZANI

For the
Small
Plane



Radial Air
Cooled

Tests that Prove

THE efficiency and reliability of radial, air-cooled airplane engines may well be noted by the experience and history of the manufacturer. ANZANI has marketed air-cooled airplane engines since 1904. The cylinders of the ANZANI engine are not measured by fifty-hour tests alone.

To mention just one ANZANI "test"—Candidates in the flying school in France use Anzani Motors in active service that have been flying since 1917, running on their eleventh year.

An outstanding feature of the design of the ANZANI engine is its great simplicity. The ANZANI can be taken apart by anyone with a few tools and put together with no difficulty. It is easy to install. It operates with ease as an ordinary motor. As one says justly, "With it is no more complicated than a law automobile engine." We are proud of that remark.

In the New Anzani engine all the requirements of from 18 to 120 h.p., the ANZANI is offering its greatest service. The numerous improvements in the construction come more power with the same weight and an entirely new standard of economy and dependability in operation.

We are now able to ensure American construction and users of the latest in service on the ANZANI engine and are prepared to accept orders for early delivery.

Prices and details on request

BROWNBACK MOTOR LABORATORIES, INC.
In the development of the ANZANI engine design is the
France design, Canada, Mexico, Central America, South
America, Japan and the Philippines.
GRAYBAR BUILDING - NEW YORK CITY

Aero Corp. of California Has Four Englerock Distributors as Agents

THE AERO Corp. of California, distributor of Englerock engines and Amson for the Alexander Aero Co., Denver, Colo., now has four Englerock distributors in the state.

Among these dealers, the Aero Corp. of California, which sells Englerock planes in the northern part of the state, has proven to be a fine organization. Since the inception of its business, planes of this company have carried more than 1,000 passengers. Mark aerial photographs, the division of Donald C. Scott, a local engineer, has been shown, and the flying school has reported many of the present group being now ready to solo.

Cross country aerial traffic has increased since the time it is reported. Transient airplanes numbered 14 being a recent week.

The president of the Aero Corp. of California is F. E. Wick, assisted. Lewis Irvine is vice president; R. E. Warren secretary, and H. R. Adkins treasurer.

L. O. Guinther Now in Managerial Position in Goodyear Organization

L. O. GUINThER of the Goodyear Aeromarine Department has been placed in charge of the airplane division of the Goodyear Tire & Rubber Co. sales department and will spend considerable time studying airplane operations in handling their line problems, it has been announced.

Guinther has had a wide experience in aeronautics as a former officer of the Army Air Corps, and has been with the Goodyear aeromarine organization for the last five years. The Goodyear company recognizes the growing importance of the air service to commercial air line operators and has recently announced marked improvements in the entire line of airplane tires.

Los Angeles Man Plans to Build A Humming Bird Type Helicopter

TEST FLIGHTS with a scale model bearing proved satisfactory. Valentine Newhouse of Los Angeles, is now planning the construction of a full size vertical rising plane of the helicopter type which he will operate on the hovering bird principle and will be capable of side descent with the engine cut out.

The inventor claims that his model has shown great stability and efficiency, and it is his belief that he can produce a full scale machine that will operate with a margin of safety greater than that of any in use.

Boeing Air Transport Co. Has Fine Record Over First Seven Months

WHAT IS intended to be a record for American aviation involving eight flying hours a day, a 100-mile Boeing Air Transport Co., according to a report from the company's headquarters in Renton, Wash., Calif., which reveals that its fleet of 24 Boeing model 7 covered more than 300,000 mi. as scheduled flying a week in passenger, freight and mail. Nearly 700 passengers have been carried since the line commenced on July 3, 1931.

Begin Construction of 13 Pitcairn Mailings for Eastern Coast Lines

CONSTRUCTION HAS been started on the 13 Pitcairn Mailings (PA-5 with Wright Whirlwind engines) which will be used on the New York-Albany and the Albany-New York air mail routes. Geoffrey B. Childs, vice president and general manager of Pitcairn Aviation, Inc., announced.

The planes are being built at the Pitcairn factory at Dayton, Pa., near Philadelphia. Rights will be used on the New York-Albany route. Mr. Childs said, and five will be placed in service on the Albany-New York route. Government contracts for the operation of both routes have been awarded to the Pitcairn company. The New York-Albany service is expected to be inaugurated about April 3 and the Albany-New York service to be started in the fall.

The Pitcairn organization has sold eight Mailings to other air mail operators within the last few months. The last was sold by Clifford Ball of Pittsburgh, who holds the air mail contract for Route No. 11 between Cleveland, O., and Pittsburgh. The plane will be out for flight today.

Four of the other seven were sold to the Texas Air Transport Co., for use on the Galveston-Dallas route, two were sold to the Colonial Air Transport, Inc., for service between New York and Boston, and the other went to the Colonial States Airways, Inc., for the Cleveland-Buffalo service.

Few Fail to Pass Medical Tests For the Private Pilot's License

ALMOST 92 per cent of applicants for pilot licenses passed medical examinations with or without minor exceptions in accordance with the Aeromedical Branch of the De-

partment of Commerce recently stated. Statist pilot examinations have been made in 1,064 cases, and of these, 934 per cent qualified.

Records show that 86 1/2 per cent of applicants qualified for the class of flying license required without waiver and 5.9 per cent, with waiver. Others that qualified, but in a lower class than that required, came to 5.3 per cent, with waiver and the same percentage without waiver. Those disqualified totaled 78 per cent, leaving 2.3 per cent, as no response.

The student is required to pass only the private pilot's examination, which accounts for the high percentage of qualifications. No waivers are granted students.

All pilots seeking licenses must meet the physical requirements of the commerce regulations. To facilitate the examinations, there have been appointed there for 300 medical examinations in addition to five U. S. Public Health Hospitals in 144 cities. There were made 64 per cent of the physical examinations of the public, the Army and Navy having made the remainder.

New Seattle Airways Flying School Will Use Club System of Teaching

A NEW school of flying has been organized in Seattle under the name of Seattle Airways, Inc. E. P. Balchster is president, while Charles E. Moore and W. F. McElroy are associates. Hugh D. B. Seattle, owner with 32 yr. of flying experience, will be chief pilot of the school. Its basis of instruction is based on the club system of teaching.

The new company will introduce the club system of instruction which will enable students to obtain limited commercial pilot licenses required by the Department of Commerce. Instruction will be in under phase.



THE KEYSTONE "PIRATE"

Standard Bombardment Plane of the
U. S. ARMY AIR CORPS

Outstanding Characteristics — Maneuverability, sturdy construction and a maintenance cost lower than ever before achieved in this type of airplane.

KEYSTONE AIRCRAFT CORPORATION
Bristol - Pennsylvania

Hallett Manufacturing Co. Plans Production on Air Cooled Engine

QUANTITY PRODUCTION is planned to be under way very shortly on a 125 hp. anaerobic radial air-cooled engine to be manufactured by the Hallett Manufacturing Co. (Los Angeles, Calif.). After constructing four engines varying from 100 to 200 hp. and from five to nine cylinders the 125 hp. engine was finally developed. Preliminary tests indicate a 15% fuel and oil consumption with a maximum of 15,000 ft. and low operating temperatures. The engine is designed so that it can be produced very reasonably and it is understood that the Hallett Manufacturing Co. has facilities for large scale production. Alfred Hallett has been constructing aircraft engines for a number of years though a short time ago he turned from that branch of activity to favor of motor engines and air compressors. The Hallett Manufacturing Co. now produces a small high speed marine motor five hp. which it has obtained a considerable amount of orders for. At present it is manufacturing an 18-hp. motor.

The engine is rated at 125 hp. at 1800 r.p.m. though it is said to have developed as much as 240 hp. and to operate as high as 2500 r.p.m. have been obtained. It is a seven cylinder radial of conventional design with overhead valves. The cylinders are built up of gray iron castings with aluminum streamlines to rods used to hold the head and cylinder in the crankcase. All accessories are in the rear while the push rods of the opposed type are in front of the cylinders. The various parts are easily assembled and interchangeable parts are used throughout. A complete description of the engine will appear in an early issue of AVIATION.

Sport Monoplane Being Developed By Brown Mercury Aircraft Corp.

A NEW two place low wing sport monoplane powered by the 60 hp. Anzani engine is now being developed by the Brown Mercury Aircraft Corp. of Los Angeles, Calif., it is reported. The wings will be semi-cantilever supported by external struts to the upper fuselage structure. With a high speed of around 90 m.p.h., this plane is expected to have very good climb, low landing speed, and satisfactory cruising ability. Lawrence W. Brown, designer of this plane and of the Brown Mercury light bi-winged monoplane now in production is a Los Angeles Derbyer, aviator who has been successful well up at a point that will make it a credit to many flying clubs and provide individuals through the country.

Idaho Power & Light Co. Granted Air Mail Route Beacon Contract

THAT THE Idaho Power & Light Co. of Boise has been awarded a contract by the Department of Commerce to seven night-light beacons and the lighting of these new gas, hydro, and electric lines. The Beacon system of the air mail route between Boise, Seattle, has been awarded to R. B. King of the power company. The entire route is now to be lighted by beacons, it is reported.

The Modern Pony Express

STEARMAN mail planes are flying on the Varney Air Lines and the Colorado division of the Western Air Express. Each airplane is completing six thousand miles of strenuous flying every month.



The aerobically Whirlwind Mail Plane

STEARMAN AIRCRAFT HAVE A PERSONALITY

The Stearman Aircraft Co., Wichita, Kansas

January 27, 1928

Four Members of Detroit Company Enter the National Balloon Race

ROBERT JOHNSON, veteran balloon builder, and George Bennett, graduate of the University of Michigan aeronautical school, both of whom are now employed by the Aero Development Corp., Detroit, Mich., will enter the National Balloon race in an attempt to qualify for the Gordon Bennett International race June 30, it was announced recently. The Aero Development Corp. is now building the 30,000 cu. ft. balloon to be entered individually by Johnson and Bennett. The announcement stated it is understood that no other team except the balloon, required under the rules of the international division, will be built for Johnson and Bennett by the same company, in the event they qualify in the American race.

Two other employees of the Aero Development Corp., F. J. Hill and A. G. Sellsong, winners of the 1927 International race, will also enter the qualification event. A total of four teams, the remaining two being entered under the sponsorship of the Detroit Flying Club, balloon division, will compete from Detroit in the qualification race.

Before coming to Detroit Johnson was with the Goodyear Tire and Rubber Co., Akron, O. He has never before competed in the national division. Bennett, being a graduate at the University of Michigan, where he obtained a B.S. in aeronautics, joined the Army school at Brooks Field, San Antonio, Tex. He held no title in Pilot William Taylor in the Detroit Navy trophy race two years ago, and won by 1st Division the Goodyear motor.

Point-Out Signs to Passengers With Aid of Novel Phone Hook-up

PASSENGERS ON the Bisco-San Francisco division of the Boston Air Transport Corp., which flies air mail between Chicago and San Francisco, are kept in fact head all about ice, snow, mountains, and other features of the landscape that would be the plane. That is, they can if they are lucky enough to draw Clair K. Vassar as their pilot.

Vassar, who is quite a mechanical genius and once completely built a D-11 type plane by himself, has installed telephone between his cockpit and the passengers' cabin. When speaking interesting scenes below he calls up his passengers and will share about it.

A factor named at a bell is used to attract attention. There is a bell, however, operating from the cockpit to the cockpit, for Vassar prefers not to be subject to interference from his work at supersonic moments.

Roy Campbell, Jr. Appointed Vice President of the Ryan Aero. Corp.

THE APPOINTMENT of Roy Campbell, Jr., as vice president of the Ryan Aeronautical Corp. of San Diego, has been made by President T. Claude Ryan. Mr. Campbell will join the Ryan organization on March 1. He has been vice president manager for the San Diego Chamber of Commerce for 15 months, and before that was industrial agent for the Public Utility Corp. in the railroad. Mr. Campbell is not a pilot, but he developed an extensive knowledge of aviation through his contact with the industry and aviation, an industrial manager of the numerous organizations he directed the activities of the committee which successfully put over the San Diego People's Airport at a recent election. He is a graduate of the University of California.

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Safety

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INSURANCE

Full coverage will be granted for all passengers, because they cannot interfere with the controls

SPECIFICATIONS

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Weight Empty	2100 lbs.
Wing Area	370 sq ft
Span	42 ft
High Speed (sea level)	120 MPH
Engine	Wright Whirlwind

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Completely equipped

BUHL AIRCRAFT CO.

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It tells of one of the outstanding recent developments of aviation—a shock absorbing strut that was not out of the drawing board and was now on the plane that really is experienced when flying.

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Aircraft Manufacturers & Dealers



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Southland Jobbing House
Norfolk, Va.

Airminded of Calexico, Calif. Form Aero Club and Purchase a Plane

AVIATION ENTHUSIASTS at Calexico, Calif., have found a way to keep a "head in the air game". They have organized an Aero Club of Calexico, purchased their own plane and have their own flying club and conduct a school of aviation.

The purpose of the club is primarily the advancement of aviation in the Calexico locality through education and instruction of its members in aviation. Practical instruction in flying and ground classes in affiliated subjects are offered. The grounds of means for pilots already qualified to participate in aviation flights in the local area.

There are three classes of memberships in the club. Active memberships are restricted to those desiring instruction in flying. Physical fitness is the only qualification necessary. These members only enjoy the privileges of flying instruction and being qualified as a member, become participant members. Participating memberships are available to qualified pilots desiring to make practice flights.

Nonactive members are all others interested who desire to further the cause of flying. These memberships privilege the holders to a limited number of flights each year, the membership being non-transferable.

Active members, established \$100.00 each and bought a plane. The participating members pay \$50 each, while nonactive help provide a lounge. When any payable membership is not based on the number of minutes the member had in the air during the month, the charge for this being \$10.00 per hour.

E. C. Mitchell is instructor-pilot and is the only member to arrive a licensed pilot from the club. He instructs men in the art and the plane is made available for outside purposes. The organization plan is simple and is of a type which can be readily adopted by any community where there exists a place of their own. It provides an opportunity for "hands on all aviation" work distributed costs.

AIRCRAFT PATENTS

Patent No. 1,618,000—CONSTRUCTION OF AIRCRAFT, SINGLE PIVOT HINGED TAILFINES. J. C. Hines, A. H. Hines, inventors. This invention relates to the construction of aircraft, particularly to the construction of the tailfin, which is hinged to the fuselage and is capable of being moved into a position in which it is parallel to the fuselage and is capable of being moved into a position in which it is perpendicular to the fuselage.

Patent No. 1,618,001—METHOD OF AND MEANS FOR VIBRATING. J. C. Hines, A. H. Hines, inventors. This invention relates to the method of and means for vibrating a structure, particularly to the method of and means for vibrating a structure in a predetermined direction.

Patent No. 1,618,002—AIRCRAFT. J. C. Hines, A. H. Hines, inventors. This invention relates to the construction of aircraft, particularly to the construction of the fuselage, which is hinged to the wings and is capable of being moved into a position in which it is parallel to the wings and is capable of being moved into a position in which it is perpendicular to the wings.

Patent No. 1,618,003—AIRCRAFT. J. C. Hines, A. H. Hines, inventors. This invention relates to the construction of aircraft, particularly to the construction of the fuselage, which is hinged to the wings and is capable of being moved into a position in which it is parallel to the wings and is capable of being moved into a position in which it is perpendicular to the wings.

FOREIGN NEWS

By Special Arrangement with the Transportation Division
Bureau of Foreign and Domestic Commerce

Channel Air Line Rates Reduced

Reduced passenger rates are now offered by the French Air Union and the British Imperial Airways on their lines across the English Channel, according to a report from Canal Aeronautique de France. Reduced rates service has been established on both lines, while the French company has also lowered its first-class fares.

The French Air Union has now charged \$22.50 for one-way tickets across the English Channel. This is \$12.50 less than the former price charged by British line. It is also noted that the French company plans the construction of faster planes which will lower the time for the flight from 25½ to 12½.

Subsidies by the French Air Union have also been reduced on the Riviera line which operates planes from Paris to Lyons and the Mediterranean. The rate for this trip is now less than that charged by the famed "Blue Train" express.

Plan Consolidation of Spanish Air Lines

Approval was recently given by the Council of Ministers of the Spanish Government to the general formation of a plan for the consolidation of air lines in Spain engaged to national service, under Commercial Attaché Charles A. Loring, in a report from Madrid.

A state subsidy amounting to approximately \$250,000 is attached to the proposal. This sum would be granted to the company to operate the service of air lines with the exception of that between Seville and Buenos Aires. The company accepting the proposal must be prepared, it has been stipulated, to raise a capital fund of three times the investment granted by the state.

The Spanish lines affected are those operating between Madrid and the cities of Barcelona, Valencia, Seville, and Cordoba, and the lines between Madrid, Burgos and Pinar and from Madrid to Portugal.

Flying Association of Sweden Organized

Practical and theoretical development of aviation in Sweden will be carried on by the newly formed Flying Association of Sweden, the organization of which has been reported to the Department of Commerce by John Bull Osborne, consul general at Stockholm. The society intends to encourage aviation in all its branches by teaching the public the possibilities of the air, by organizing flying schools for military and by having organized air line service in operation as well as working for the opening of new ones.

The Association also plans, it is understood, to assist the Royal Aero Club in the donation of a fund for veterans and widows of war and military aviators. Consultation with the League of Nations and its Advisory Technical Committee for Communications will also, according to plans, be soon conducted.

Offer Prize for 50 Mi. Glider Flight

A prize has been offered in Mexico for the first pilot to make a glider flight from Mexico City to Puebla, some 50 miles distant. Mexican aviators and civilians have questioned the proposal which stipulates that an ingenious plane or glider must not only the journey safely by maintaining in the air. The prize will be the first of its kind ever held in the republic.



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Nobile Selects Polar Trip Camp Site

Stadline, near Sled in Possession, has been selected by Dr. Umberto Nobile as a stopping point for his dog sled trip, which he has north on his contemplated scientific expedition to the North Pole. Nobile expects this trip, according to recent reports, to last about a month, and a short time ago he made preparations for the expedition of a party, for two or three weeks will probably be spent at Stadline before the Italian continues his journey to Spitzbergen.

The route from Sled was planned will take the dog sleds over Venetia, Vienna, Prague, and Berlin to Sled. After flying from the point to Spitzbergen, the General plans to pursue the Polar route and later land in Canada following the completion of his scientific observations of the eastern continent.

Send Weather Reports to Channel Pilots

Pilots on planes crossing the English Channel are to be constantly advised of weather conditions by a new aircraft radio system which has been put in operation. The information is broadcast to the pilots from a station located some three miles from the Chouville field at London and operated by remote control. The latter arrangement was suggested by the fact that wireless work at the airport would be hampered by the presence of the planes.

The Marconi laboratories perfected the speed device for the test. Two or more aural signals are emitted on differing wave lengths as the same aerial in this system.

Army Planes Courty Mexican Trains

Those who ride on Mexican trains operating through the hands and rebel sections of Mexico have recently perceived their trains and heard the machine with rather great surprise, for it has been a habit with the railroads to stop the trains and let the passengers. The situation has now changed for the better, however, when military airplanes accompany the trains and assist the hands with their loads.

You might have recently noticed by the Mexican planes in the north section near the Volcan de Colima. The trip last two men in the cockpit, according to reports.

Paris Schedules Aero Exhibit for June

In order to encourage the development of aviation, an international aviation will be organized in Paris on June 29, according to a report delivered to the Department of Commerce by H. H. Kelley, trade commissioner of the French capital. The exhibition is to be held under the direction of the French Commission for the Development of the French Republic. At the time of the exhibition, which will follow the 12th exhibition, will last about six weeks. The last was held June 2 to 19 in 1929.

Plus Night Service on European Routes

Air service during the night from Paris to Rome and from Rome to Berlin is now to be inaugurated, declared Air Trade Commissioner H. C. Schmitt in a report from Paris to the Department of Commerce. A "Midnight-Midday Express" from Paris to Genoa is also to be put in operation. The service, which is to be a long trip, covers its name from the 12 to 12 schedule planned for the trip. Each of the two or three planes under construction for this line will have 15 berths.

Aero Association Formed in Mexico

Formed along the lines of similar groups in the United States and Europe, the Mexican Aeronautical Association was recently organized to foster civil aviation in the Republic of Mexico. Flying will be encouraged throughout the country by the society, and every possible aid will be given to progress in things aeronautical.

Side Slips

By ROBERT R. OSBORN

In New York a psychologist from Columbia University has been making a series of tests on a number of young lady subjects to determine definitely whether or not they should be allowed to fly. In his tests he has placed a battery of a variety of tests together at a certain pattern performance and a series of instruments for measuring syncope blood pressure and respiration, observed their reactions when asked to fly. Some were fainted on the ground. At the time of the test to prove the hypothesis was a bit in the head, but in later observations was far from being "fainted", when they were referred to the newspapers for the latest scores. In order to the tests for the purpose of testing them to the means of Army, Navy and Department of Commerce officials to prove the hypothesis was a bit in the head, but in later observations was far from being "fainted", when they were referred to the newspapers for the latest scores. In order to the tests for the purpose of testing them to the means of Army, Navy and Department of Commerce officials to prove the hypothesis was a bit in the head, but in later observations was far from being "fainted", when they were referred to the newspapers for the latest scores.

A new man tells of a professional side-slipper, who is a man, being married to a woman, namely actress in the film. The man is in the movie to comment that any such woman as this should certainly make a man a very poor actor. However, a professional side-slipper, who is a man, being married to a woman, namely actress in the film. The man is in the movie to comment that any such woman as this should certainly make a man a very poor actor.

David Cross, in the New York Evening Post comments on the new side-slipper, who is a man, being married to a woman, namely actress in the film. The man is in the movie to comment that any such woman as this should certainly make a man a very poor actor.

A short time ago a Navy man, while attempting to make a landing in New Hampshire, became entangled in a wire on telephone wires. We can imagine quite a few more accidents if we had a wire on telephone wires.

A new man tells of a professional side-slipper, who is a man, being married to a woman, namely actress in the film. The man is in the movie to comment that any such woman as this should certainly make a man a very poor actor.

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The Lasting Undercoat

The Best Finish (Undercoat—Our Clear Acetate—
Undercoat—Our Pigmented Dopes)

Perry-Austen Mfg. Co., Staten Island, N. Y.
Correspondence to United States Government

test and reliability of the wind, height of ceiling and other reliable facts, along the pilot's course as he handles him a few moments before his projected flight.

The increase of aviation activities in the Chicago district area has been so rapid that forecasters in the weather bureau now require an extra time to make forecasts for the area here on for the regular forecasts of the eleven states and the great basin within the Chicago forecasting district, Greenwald, chief writer of the Chicago forecast, said. The bureau's forecasters Henry J. Cox has stated. This, he explained, indicates the importance that flying forecasts have already attained.

A. Flomberg, managing director of the Royal Dutch oil company, one of the largest aerial service operating in Europe, was a visitor at the Chicago airport recently.

Albert Hanner, Cheshamfield Field, Forest Park, recently received his transport pilot's license.

Chicagoans during January sent an average of 236 ft. of mail daily by airplane. A newspaper statistician compares this to the bulk of the postal 43 letters to the postal bureau that 25,159 letters were sent by air mail each day. This was 43 per cent. of the entire air mail of the country during the same month in 1934.

Need \$50,000 Clerical Appropriation

Because Chicago is "the hub of the air mail service of the country," as denoted at a hearing before the appropriations committee of the House of Representatives, an effort is being made to have Congress appropriate \$50,000 to provide for the maintenance of assistant air mail superintendents and clerks at Chicago. The funds is needed, it is argued, to operate the loading and unloading of the mails at the Chicago Field. Assistant Postmaster General C. C. Greer indicated that similar service is also required at New York, Fort Worth, and Salt Lake City.

Carl Reedberg, poet and biographer of Lincoln, took a flight on the modern Fokker the other day, when in pilot or airplane over the Chicago Loop.

What is said to be the world's largest aircraft hangar will soon be erected close a Chicago skyscraper, it has been announced by Clyde L. Barker, member of the municipal air commission. It will be shortened "Landmark Field" and will cover a space visible at a distance of 200 miles under pilot air navigation.

Piloting a Stearns-Detwiler monoplane, Edward A. St. Louis recently made a non-stop flight from Chicago to Tampa, Fla., in eight hours. The average was 137 m. per hour, the 1,200 m. route. The plane was being delivered to Arnold C. Kirby, Chicago mechanical banker and yachtman.

St. Louis, Mo.

By M. L. Alexander

Philby Hall, owner of the St. Louis Brown and the last business man to take activity in the airplane as a rule of everyday travel, has purchased a new Ryan Broughman with all the latest improvements, including brakes, and will shortly go to San Diego, Calif., with his pilot, Frank T. Davis, to bring the plane back to St. Louis. Hall's first plane, in which he and Davis covered some 25,000 m. in 10 to 12 m. in the Robertson Aircraft Corp. and will be used in carrying passengers at Lambert-St. Louis Field and in occasional trips to the mail route, especially on days on which passengers are loaded.

Hall is one of the backers of the R. F. Mahoney Aircraft Corp., maker of the Ryan plane, which is now visiting to the business in San Diego preparatory to moving to St. Louis where work on the airplane factory at Lambert-St. Louis Field is now to begin.

Oscar Johnson, young St. Louis sportsman who has just to aviation, recently drove to Wichita by automobile with his

plane, Elmer Dempsey, to get a new plane, a Travel Air model, with a 14-horsepower engine. Johnson said his airplane through Clyde Broughman of the Parks Air Lines, making it his old OXES Waco in part payment.

A new Hughes with combination wing and OX-5 engine is now owned by the Van Hoffmann Aircraft Corp. At the same time, the Van Hoffmann concern was notified it had received its last OX-5 plane. The old reliable engine is being a truly, virtually the entire remaining stock of 1935 will, as expected, sold recently by the Robertson Aircraft Corp. to the new Curtiss-Robertson Aircraft Corp., for approximately \$400,000.

In the sale the Robertson Aircraft Corp. agreed to continue the support before having them over. Frank Broughman, president, in making arrangements for a conditioning shop at the field in which the work will be done. It is estimated it will be two years before the engine are all worked over. Meanwhile, the Curtiss-Robertson Aircraft Corp. will take care as well as they are completed for installation in the "Ox", a other monoplane to be made at Lambert-St. Louis field.

Display Ryan Broughman and Englewood

The Van Hoffmann Aircraft Corp. had as airplane exhibit at the automobile show here at the Union Stock Yards. Ryan Broughman and an Englewood were included in the display, both men, including John Campbell and Milt Gorton, two of the company's fliers, were on hand to explain the operation of the planes.

Campbell, incidentally, has been piloting a fine flying record during his past several weeks. After trips to Tulsa, Okla., and New York in a Ryan Broughman, he took over an Englewood and made a tour of Central and Northern Missouri as a preliminary campaign to sell airplanes in the middle states. Despite bad weather and light landing fields, Campbell made his tour without incident.

Clyde Broughman of the Parks Air Lines put in more than 90 hr. of flying during 1934, hanging up a good-sized time record for other aviators at the field to shoot at. Most of the time was spent in instruction of students.

Philby Hall, who once flew the mail out of Lambert Field and now makes a mail route on tour with his pilot, Landmark, he purchased the older plane of the French Airplane Mfg. Co. of New York, having resigned as inspector for the Department of Commerce. Lane will use a French-made monoplane in making his mail route.

Landmark's Ford coupe, in which Phil Hall had a half share, was donated recently by Lane to the St. Louis Air Club with the proviso that it be placed at the disposal of helping them who drop in at the field. Landmark used the car to trip from the field to St. Louis before he became a delivery.

San Angelo, Texas

By Sam Johnson

The first airplane for the McCauley Aviation Club was received in the middle of January. Five other planes are to follow. The first plane piloted the first in the town landing field. One Goldsman of the San Angelo Airways, Inc., has brought a new Luscombe Page and with him it for commercial work in the middle San Angelo.

Aviation are valuable as team builders, in the opinion of the chapter of commerce here. 60 production early in the chapter this town into a city, and the chapter now plans to enter the aviation industry the problem of an airplane to be used for carrying of men to the field on a regular basis. The plane will solve the problem of transportation over long distances in this section of the country.

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Portland, Ore.

By John W. Anderson

Eight-year-old Jack Koppern, son of J. Koppern, general manager of the Bucken School of Flying of Portland, Ore., has a first ambition to be the youngest solo that as is today. He recently attained the great age of eight and on a birthday present his father gave him a flying machine in which to do it.



All went like a flash through grades in grade 10, being forward in his weekly lessons. Then on Saturday afternoon he took out on the Bucken field associated in his own and people and eager to be in the air.

His instructor is Dick Harkin, brother of Tex Harkin, head of the school. Jack declares he will solo before he is 11. He was trained in a plane as an airplane and is now being taught by Colonel Landwehr, former instructor at the school.

J. Koppern, Sr., has provided his son a plane of his own when he is 16. The boy wants to be able to handle one solo by that time for he will have had 10 years of flying experience.

The Port of Portland will cooperate with the Aero Club of Oregon in preparing for its air carnival scheduled to come soon to June. The club plans to have the whole day show to display experience of entertaining the National Air Year also here in July.

The Port of Portland will be thrown open for the annual, although it will not be ready for permanent use until early next fall. James H. Johnson, general manager of the field, announced. A temporary runway will be built over the uncompleted runway extending the island airport with the result. Harkins will be back to accommodate 20 airplanes to be entered by local companies. The hangers will be of the compact type worked out by Gary Study, per design. C. O. Lewis has been appointed superintendent of the airport.

The Oregon Youth Club is considering moving its camp to the basin between the airport and the mainland. The plan is to be made into a camp base. In return for the use of the basin the group has offered to let the Aero Club use its clubhouse.

Charles V. Ekins, president of the West Coast Air Transport Co., which will put three five-engine B-24s on service between Portland, Seattle, and San Francisco, has joined the local Aero Club.

The Varney Press-Bell Lake air mail line has received a branch office in Portland with H. E. House in charge. It is located in Clark V. O'Callaghan of Seattle, chief manager of the line. Mr. O'Callaghan came to Portland to visit the office.

Capt. Jack Clements, veteran of the Royal Canadian Mounted Corps, has been appointed chief pilot by Aero-Canada Post Corp. Captain Clements is credited with 2,500 hours of

time without a major accident. He has held varied command flying positions in the Northwest.

Appointed of Local, Tommy Fowler of Gray Field, San Francisco, as one of the pilots of the West Coast Air Transport Co., has been succeeded by Charles V. Ekins, general of the company. Fowler is one of the best known pilots in the West. He piloted the plane in which Col. G. S. Patrick, commander of the Army Air Corps, toured the west some time ago. Fowler will be one of the pilots of the Oregon State companies to be put in passenger service on the north March 5. He has obtained a year's leave from his duty.

Pittsburgh, Pa.

By Joe Krizan

Time was when 16 planes were recently sold by Robert J. Smith, manager of field operations for the Lehigh Valley Philadelphia Flying Service located at the Philadelphia Airport. The purchases were made by C. A. High of Washington, D. C., and by the Noble Aircraft Co. of Pittsburg, the latter taking two planes.

According to information received here from the Noble agency, operations will start at the Philadelphia Airport within the next few months. The company has a 1,200 by 1,500 ft. lot and is erecting a hangar capable of accommodating several planes.

W. R. Henderson, general manager of the R.R.T. Corp. of America, known manufacturers of the city, announced recently that during the past year the corporation has more than doubled its personnel and increased its headquarters office space to twice its former size.

L. V. Smith in chief engineer, Clarence D. Bird is production manager, Warren H. Lott is designing engineer, Alfred Bickley is chief draftsman, and Ira Deuch is office manager of the company. During 1937 many important additions were made to the organization's engineering staff.

Frederic Field at Willow Grove, Pa., has been under three feet of snow. There has seriously interfered with take-off and landing tests of students in the flying instruction classes of Pioneer Aviation, Inc., owners and operators of the field. Fred and Weymouth, one of the long established flying organizations here, solved the snow problem for their flight by taking them to their Fokker C-3 (TOM) engine. The plane was rarely used around Philadelphia and the street situated considerable comfort.

Membership on the general committee of eight representatives of public schools throughout the country who are operating with the Department of the Promotion of Aeronautics in the proposed plan to teach aviation subjects in elementary and secondary schools, has been accepted by Dr. Edwin C. Doolittle, superintendent of public schools of Philadelphia.

Richmond, Va.

Another governor has taken to the air as a flight enthusiast. This time it is Gov. Harry F. Byrd of Virginia, brother of Gov. Richard E. Byrd, of North Pole and trans-Atlantic fame. With his children, Governor Byrd is a frequent visitor at the Richmond Municipal Airport, better known here as the Richard E. Byrd Flying Field, and has been taking flight as a passenger in planes operated by Pioneer Aviation of Virginia, Inc.

Less Harold Elliott, formerly connected with Pioneer Field, Willow Grove, Pa., is in charge of field operations here for the Pioneer corporation, operators of the airport. The field has two 1,000-foot runways, 2,000 ft. long and 300 ft. wide, the center strip of each being gravelled.

Harry J. Kelley at Chester, Va., has made his first solo flight at the airport and has the distinction of being the first pilot to complete the Pioneer Flying School course here. He returned in December.

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Duluth, Minn.

By R. A. Lindbergh

Tacoma as those responsible for the construction of the site selected by the Junior Chamber of Commerce airport committee have had practically no experience along aviation lines. It was the general opinion of the assembled citizens that on this account a committee should be sought in order to create a public approval of the project. Consequently, the city will be fortunate in having Wm. P. MacGraw visit Duluth to discuss airport plans on the situation.

During his talk following a tour of inspection, MacGraw brought out the value of making airports into air parks, with the usual landing space, hangars, lighting equipment, and other facilities, which should have in addition a recreation section on or near the airport site, where spectators could assemble to view the flying activities, without danger of interference. This plan would be somewhat similar to the customary city park and would be no exception. Later in the popularizing aviation and building good will for the city.

Before a bond issue of perhaps \$100,000 (possible through an act of the legislature of the state of Minnesota) is placed before the voters, general issues for an airport must be stressed. It was desired. The assembled citizens, knowing that Fargo, N. D., is building strongly for air and service from the Twin Cities to Winnipeg by way of their city, have pointed out the desirability of competing with the Dakota city in the problem on the north.

The answers taken in Minnesota and Wisconsin indicate that airplanes will eventually be used extensively at the airport and to the proposed airport is adjacent to a large body of water, the dual facilities for serving both land and air planes is a factor that is a valuable asset to the city and thus making the lay finest airport.

Boston, Mass.

By David Rockwell

Lieut. Clarence Shindler, Army instructor with the Massachusetts National Guard as spokesman at Boston, and Lieut. Benjamin Franklin Belling, Air Corps Reserve, set a new record for air ship flights in Boston field recently when they flew a new Curtiss Falcon through to 1 in. 30 sec. The plane has been added to the two PT-18 as a second member of the local unit.

Competitions which have been made show that Army record regular pilots at Boston limited 15 in. 50 sec. time the week ending Feb. 6. The second place record 17 in. 30 sec. record added 12 in. and Navy men eight. During the month of January the Boston Airport Corp. totaled 17 in. 30 sec. flying time.

Lieut. Edward C. Stark recently saw the air mail two between Boston and Haverhill field because of the resignation of Pilot G. Olson.

Capt. Robert P. Raymond, Jr., mechanic on who was awarded the D.R.C. was impressed when at a recent aeronautical program at the new Curtiss Club has he saw for the first time a set of markings patterns showing his recognition of the model. Capt. Eddie Rosenbush was decorated at the same ceremony. Speakers at the program were Maj. Charlie Woolley, National Guard air commander, Summerfield, instructor for the Curtiss Air Transport, Inc., and Edward Gossard, prominent manufacturer interested in several new aviation projects.

The Boston chapter of the National Aeronautic Association visited the U. S. S. Lexington in dry dock at South Boston a short time ago as guests of Capt. A. W. Marshall. A set plan of houses without formal speakers has been given by the Lexington. An attempt is being made to make the correct round table discussions of the various aeronautical cost events.

Albany, N. Y.

By John S. York

Construction work on the new airport is progressing at a fast rate, and it is hoped that the field will be in use sooner or later.

On Feb. 24 and Friday of the Empire Incorporated at Queensborough Field, will start a complete flying school. As we said so soon as it is available. Interest in this school is growing with every passing day as more and more people are ready to take a course of instruction.

The Board of Supervisors, acting under the request of the Albany Board of Supervisors, has decided to purchase a piece of land to permit issuance of bonds for further development of the field.

Albany Field has the honor to be the Washington headquarters, where Field has the official headquarters of the Army. Many manufacturers, according to a recent report, are building Albany as a site for an airplane factory. Since it is considered as the best site for an airplane factory, it is expected to have a great many of the facilities.

After General O'Day of the Colonial Airways has agreed that the Albany-Cleveland air mail route will be in operation as soon as the new airport at Albany is completed.

Albany Post Expedition, to be held the latter part of 3 months, there will be several interesting new features. Since Field, who is the agent for Travel Air, will exhibit new planes, and it is thought that some other manufacturers will be represented. The General Electric Co. plans a display a complete model of the new Albany Airport.

Falmouth, N. Y.

By John S. York

A proposed airport was one of the projects discussed recently here on Feb. 24 and 25. All details plans, however, have been postponed pending the action of the legislature on bills regarding the legality of bonding for airport bonds and the right of a city to conduct land for airport projects.

George H. Taylor and his pilot Alvin Graham searched to lower end of Lake Ontario a short time ago in their Stinson biplane for four men who disappeared while going to a cruise a land near on the lake from Rochester to Canada. The work was interrupted when a wheel was broken while landing in front of the Kingston Traffic Club at Kingston. Capt. Richard Horner of the Coast Guard cutter USCGC was called in to assist in the search. The cutter was called in to assist in the search. The cutter was called in to assist in the search.

San Ardo, Mich.

Members of the San Ardo Chamber of Commerce have voted to raise \$1,000 for contributing the city-owned 100-acre lot, of some 115 acres and lying north of the city, for a airport project. The Chamber members held that the city of San Ardo is large enough to support an airport and making this will be taken to determine the suitability of the project for development for a landing field. Following preliminary work, the city will go ahead with the construction of a airport and installation of flood lights and a beacon. The airport has the same shape of the center of the city.

Farm City, Okla.

A new passenger was recently carried on the 100 in. 30 sec. time taken to the city in an American Eagle plane. It was a 20-minute trip. The plane was delivered to high school boys who have been formed the Farm City Farm of Oklahoma City and are studying vocational agriculture.

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